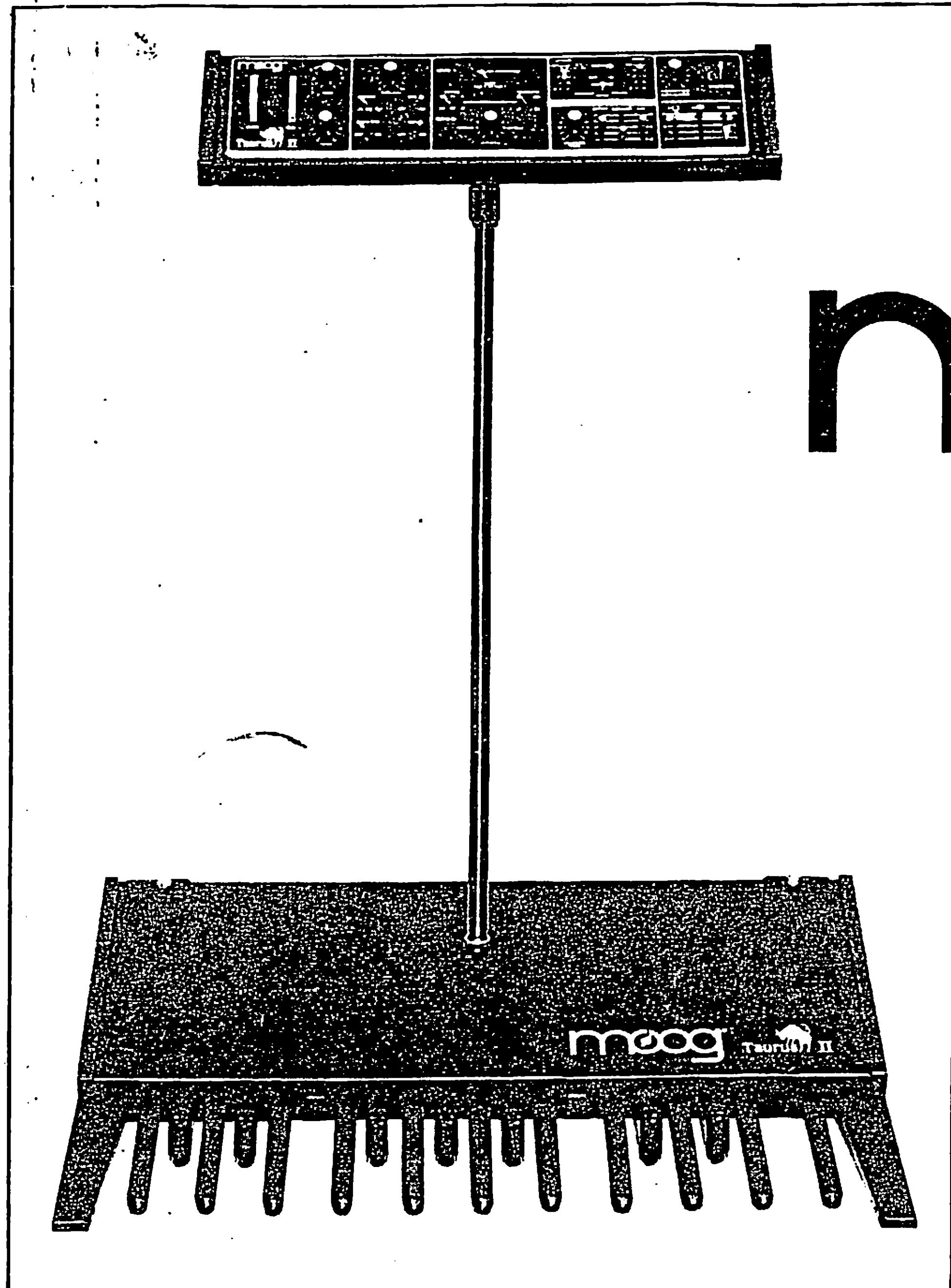



# moog®

# Taurus II

OWNER'S MANUAL by Val Podlasinski

SECTION 1

## INTRODUCTION

Thank you for choosing the Moog® Taurus II Synthesizer.

The Taurus II is a very powerful, unique instrument. It combines a foot pedal control with a versatile synthesizer featuring a logically laid out front panel and the famous "fat" Moog sound.

This manual serves as an introduction to the instrument and explains the basics of synthesizers using the Taurus II as a working model. Each of the following three sections takes a different approach to understanding the instrument.

"Trying Out Some Sounds" consists of sound charts which enable you to familiarize yourself with the front panel and the sound capabilities of the instrument.

"Getting to Know Taurus II" introduces you to each front panel control by way of experimenting with it. At this stage, you learn how to use the instrument.

"A Closer Look at Taurus II" is a more involved explanation of the Taurus II and explains the basics of the synthesizer.

Once you are familiar with the controls of the Taurus II, you'll be ready to create your own sounds. Part of the excitement in making music is experimenting with your instrument finding new sounds and new playing techniques. There is always something else to discover and that's what makes mastering a musical instrument such an enjoyable continuing experience.

Val Podlasinski

## SECTION 2

## CONTENTS

## SECTION 3

## INITIAL SET UP

Now that you have unpacked the Taurus II, save the shipping cartons and packing materials in case any long distance transporting is required.

First check to see that you have all the components:

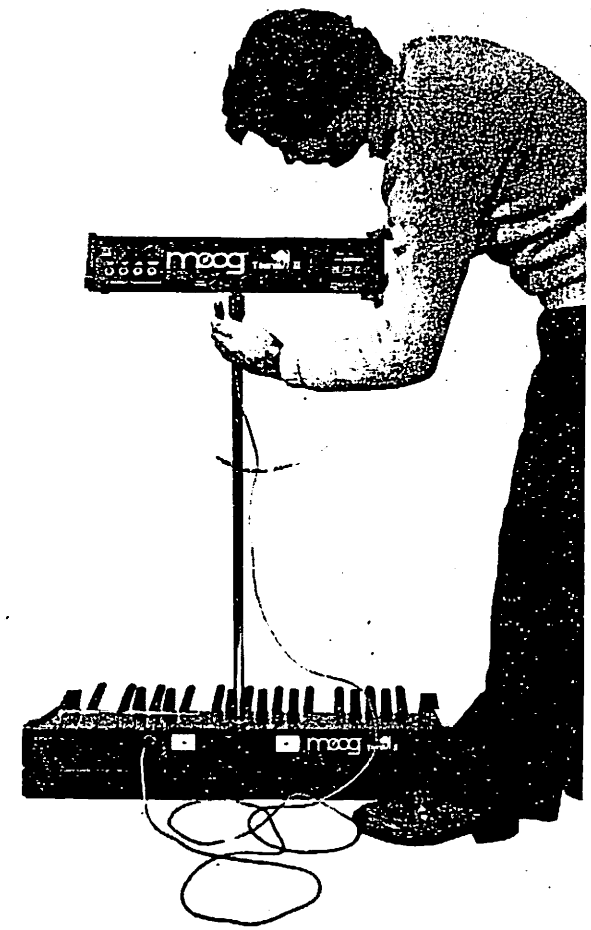
- Pedalboard
- Synthesizer Module
- Stand
- Power Supply
- 5 Pin Connector Cable
- Gig Bag




Step 1: Take the stand and carefully screw the end with the larger thread into the adapter in the center of the pedalboard.

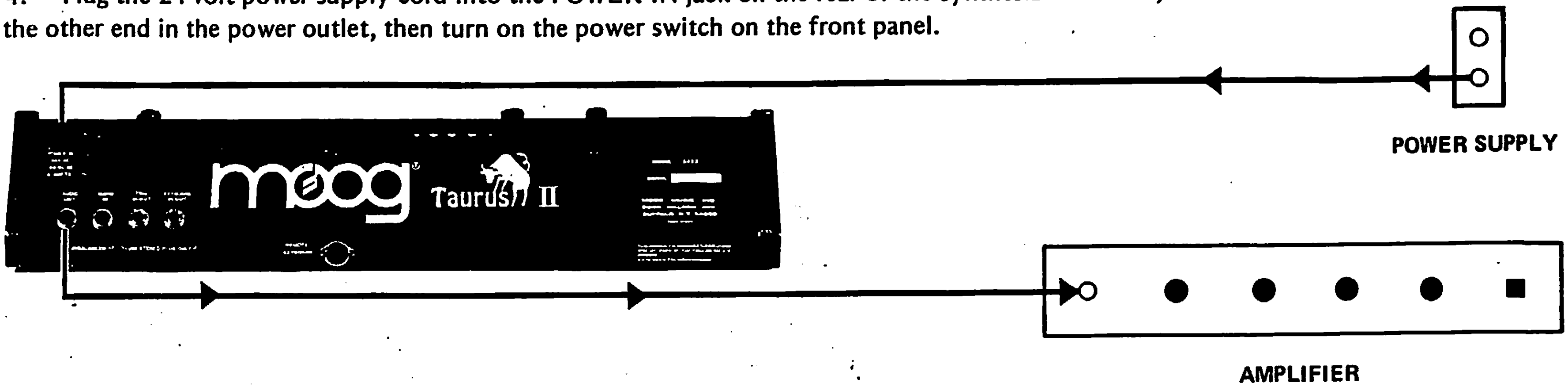



Step 2: Attach the synthesizer module to the stand. Underneath the synthesizer module there is an adapter which mates with the thread of the stand. The thread is long in order to make a sturdy connection so several turns of the module will be required to make a tight fit.




Step 3: Connect the 5-pin connector cable to the rear of the pedalboard and rear of the synthesizer module.

Step 4: Plug the 24 volt power supply cord into the POWER IN jack on the rear of the synthesizer module, plug the other end in the power outlet, then turn on the power switch on the front panel.




Step 5: Using a 1/4" jack audio cord, connect the AUDIO OUT on the rear of the Taurus II to your amplifier or monitoring system.

Always allow at least 10 minutes for any synthesizer to warm up prior to tuning up.

### a User Tip

If no sound is heard, first check that all connections have been made properly.

Check the 5-pin connectors at each end.

Check that the power supply is pushed in all the way in the power outlet.

Check the power-in jack plug, at the rear of the synthesizer module, to see if it is inserted correctly. The power light above the power-on switch should be glowing.

Check the audio cord by substituting it for another. Alternatively, turn the amplifier volume to a low level, disconnect the audio cord from the Taurus II and touch the end of the jack plug. If a hum is heard, the cord is O.K.

If you have any problems with the Taurus II, you should first contact the dealer you purchased it from. Any technical problems usually can be solved by the dealer. Service centers and our own Service Department are also on hand to assist you. Information on the service center nearest you can be obtained by contacting:

Moog Service Department
2500 Walden Avenue, Buffalo, NY 14225; (716) 681-7242

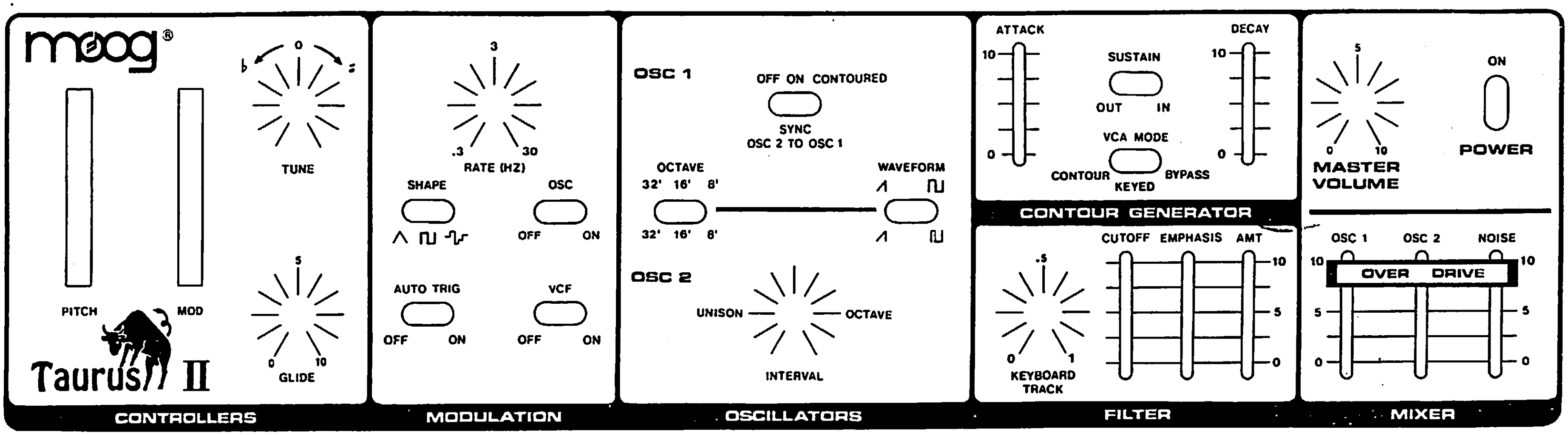
SECTION 4

## AMPLIFICATION

To get the best sound reproduction for Taurus II

Taurus II is a powerful monophonic synthesizer. Many of you will use it primarily for bass sounds, however it will produce a wide range of pitch and tone color just like any other synthesizer. If you are going to use Taurus II for bass synth work only, a bass amplification system will suffice. However, if you intend to continually use a variety of contrasting sounds, try to use an amplification system which is designed for synths/keyboards. Your Moog dealer will be able to advise you on this subject.

## TRYING OUT SOME SOUNDS




Taurus II sound charts are line drawings of the instrument's front panel. Positions for placing toggle switches, rotary controls and sliders are indicated by dots.

To help you remember your own front panel settings (patches) we have included two blank sound charts on page 18. We suggest you photocopy them to have a supply of blanks. If you create a sound you wish to use again (especially when you're experimenting or recording) write it down. You'd be surprised how easy it is to forget that hot patch.

## A User Tip

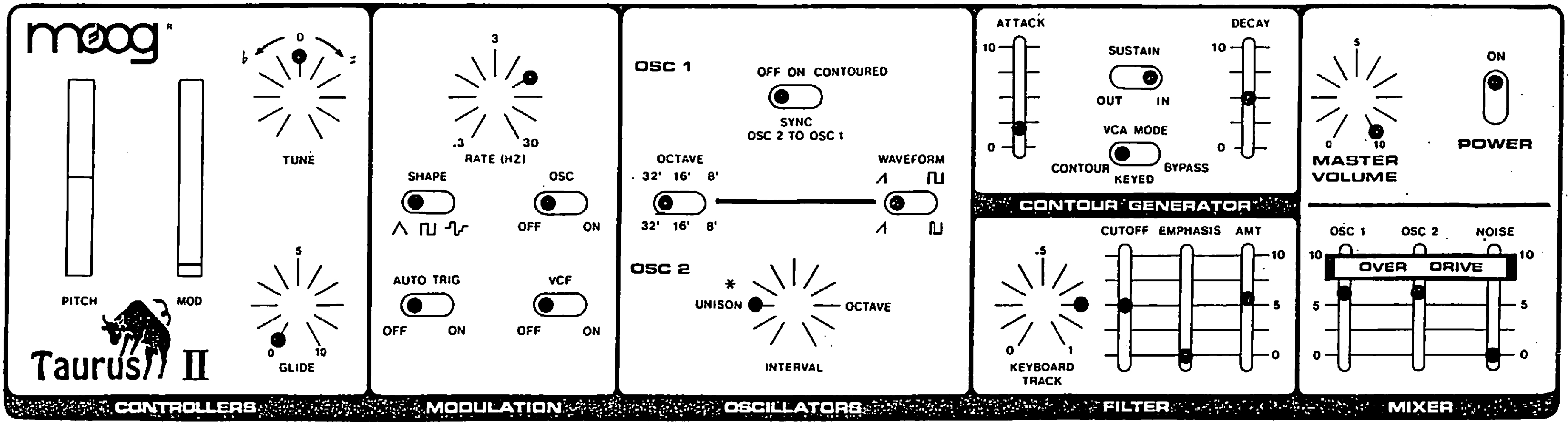
These sound charts are designed to guide you toward a particular sound. After setting up the patch, experiment by moving one or two controls. By making several adjustments, you might find a sound you prefer.

Suggested controls to experiment with are:

1. Cut-off slider in the Filter section. (This controls the brightness of the sound.)
2. Octave switch in the Oscillator section. (This switch selects the overall pitch of the instrument.)
3. Attack and Decay sliders in the Contour Generator. (These control the rise and fall of the loudness and the filter.)

O.K. You're eager to start playing the Taurus II. Set up these patches and get an idea of the many sounds Taurus II can produce.

ORIGINAL TAURUS VOICE

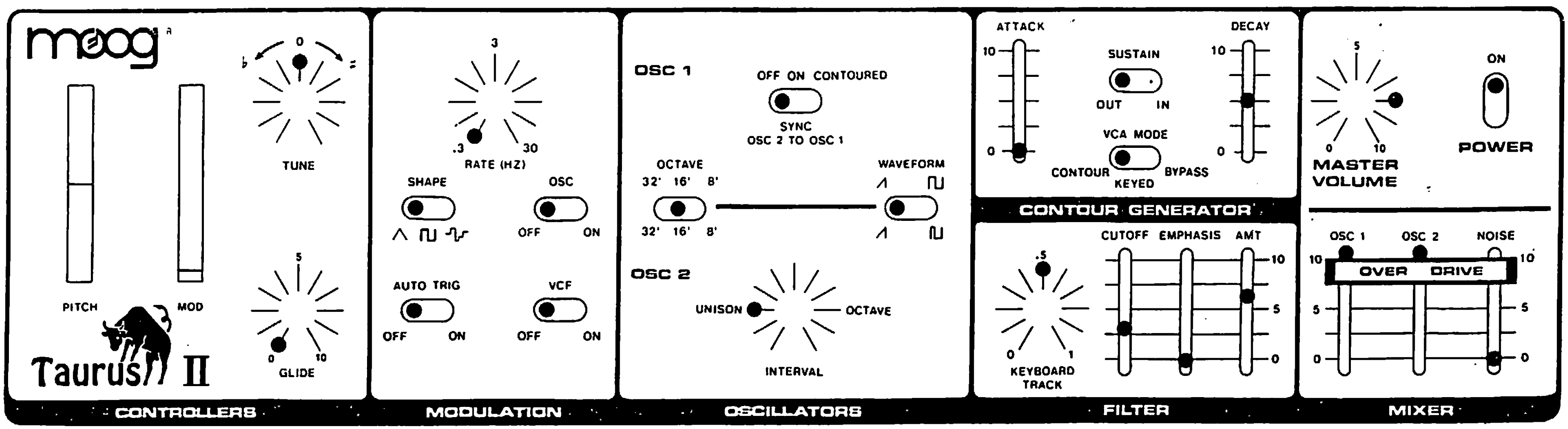



* Note: Detune Osc 2 slightly

a User Tip

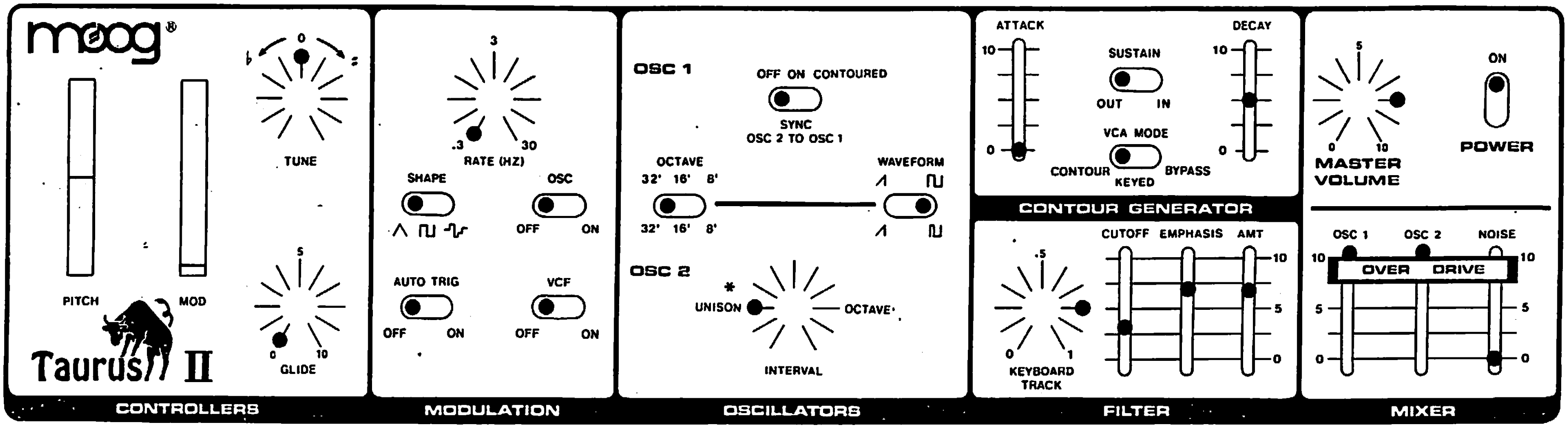
Detuning helps to get a richer, fatter sound. Only a small amount is enough to get the desired effect.

BASS I



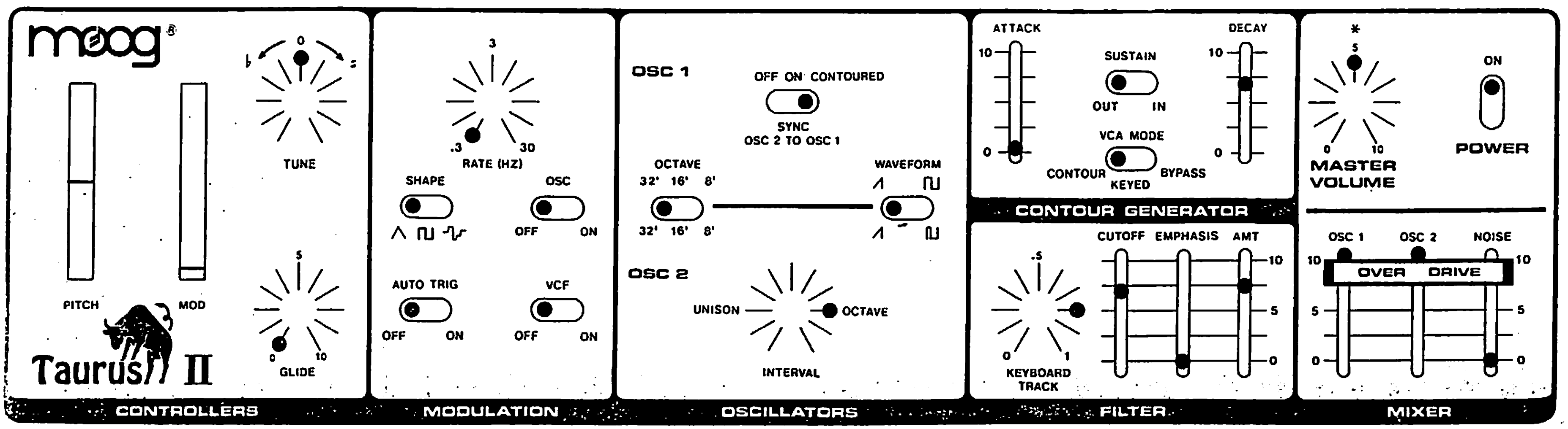

Note: Detune Osc 2 slightly

BASS II



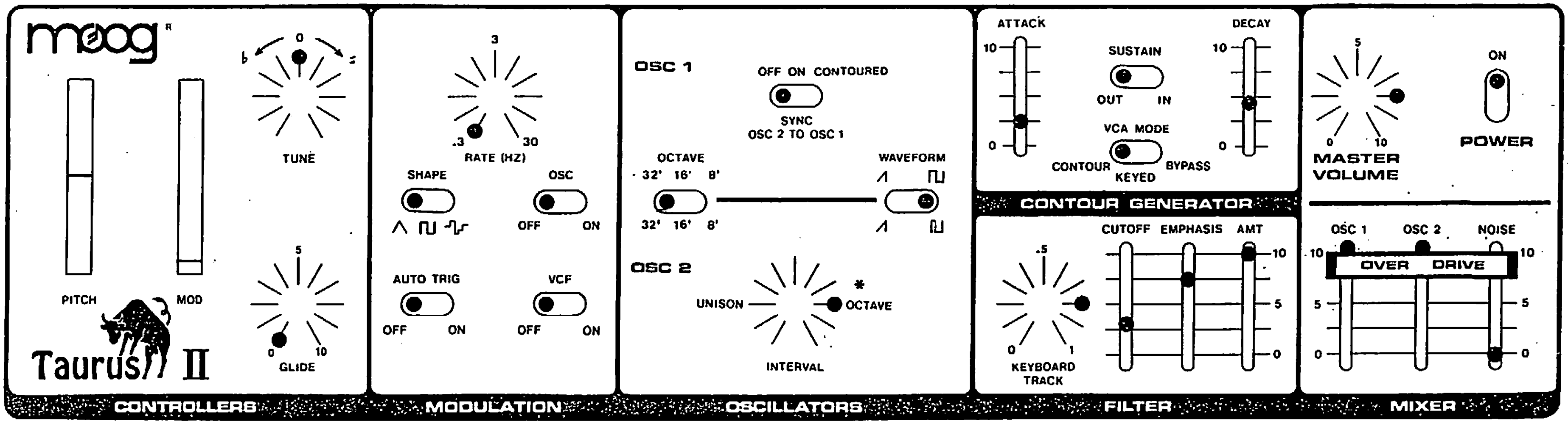

* Note: Detune Osc 2 slightly

BASS III



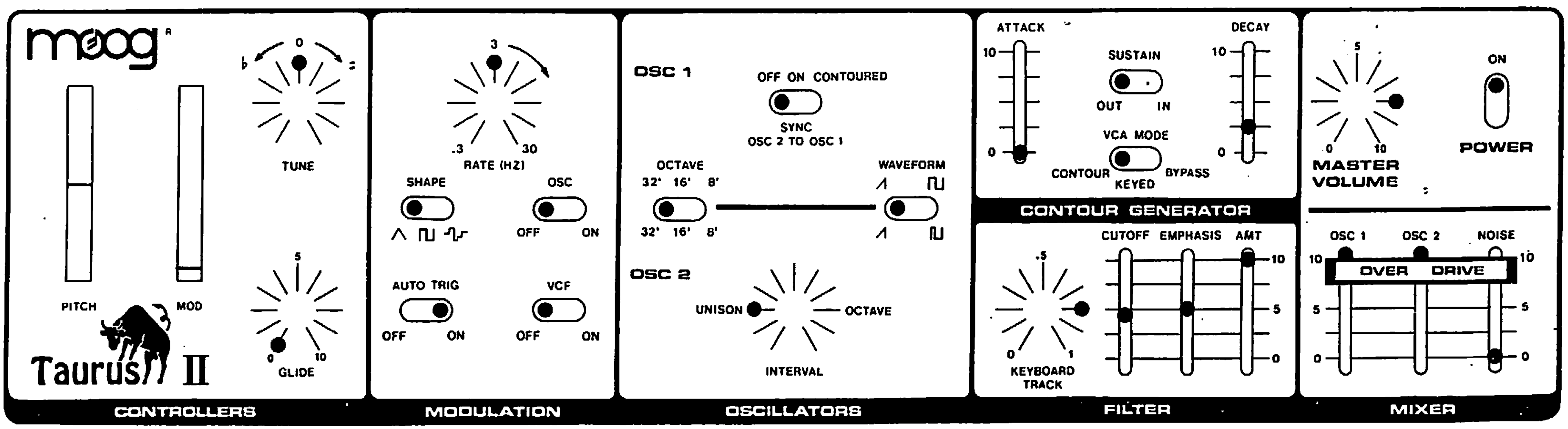

* Note: Watch the Master Volume on this patch

BASS IV

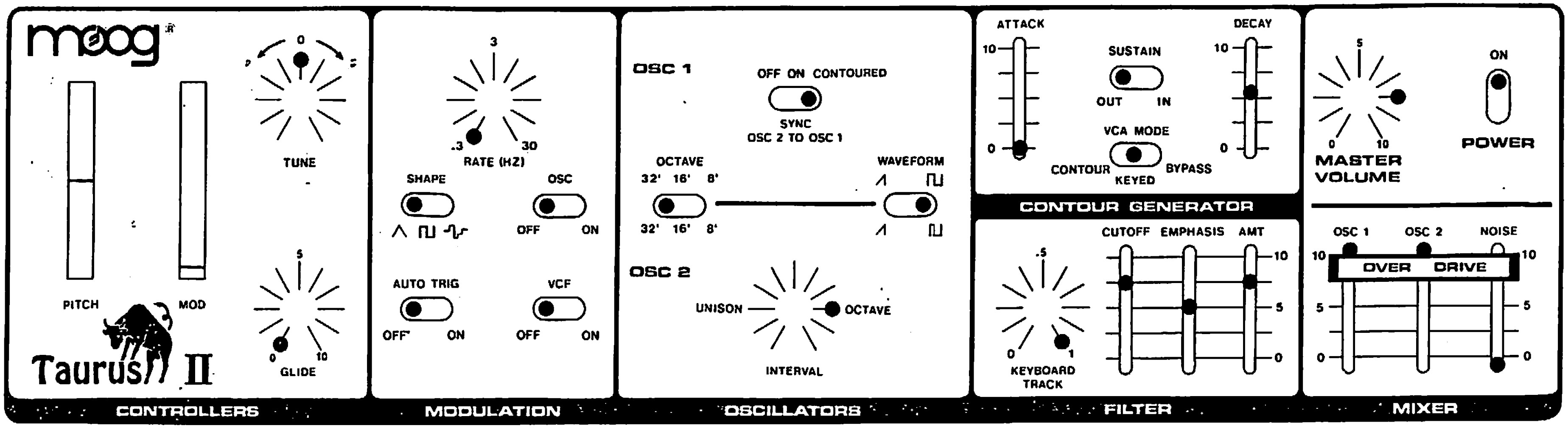



* Note: Detune Osc 2 slightly

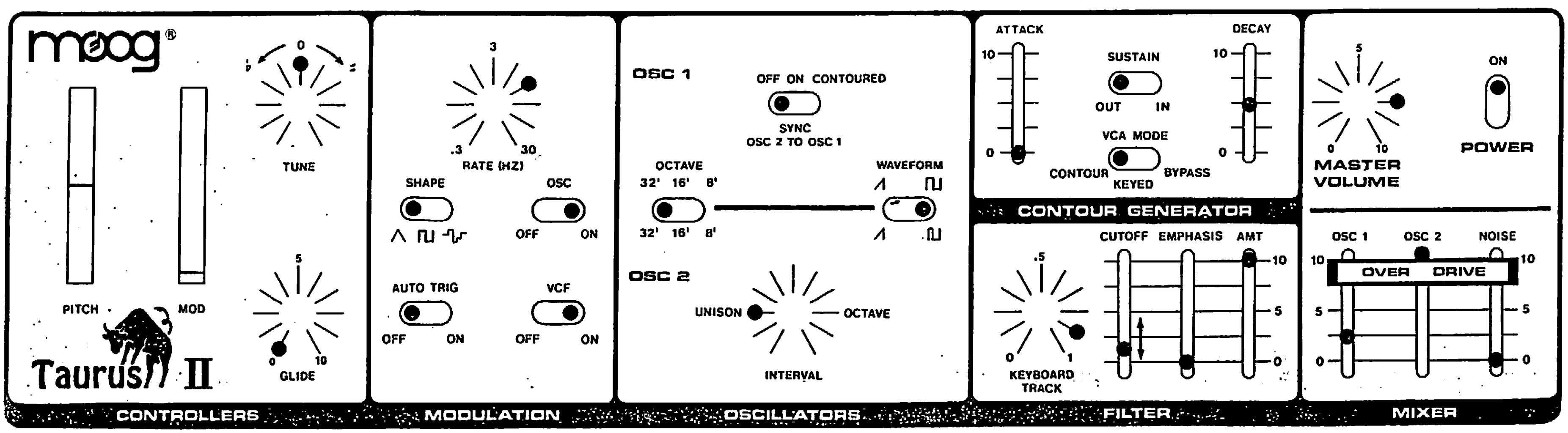
AUTO BASS



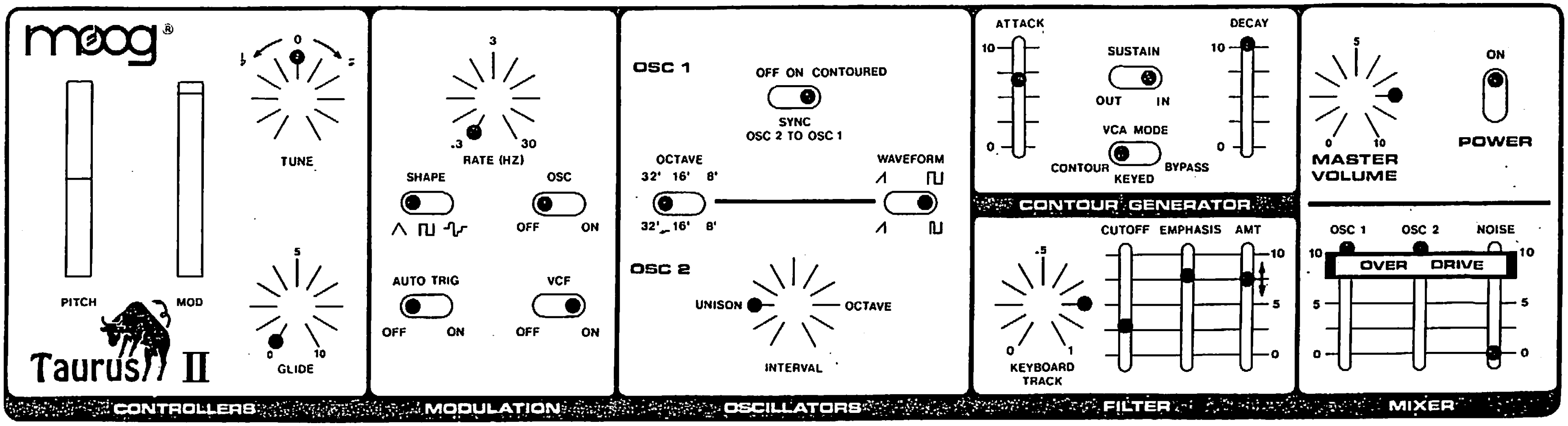
BASS V



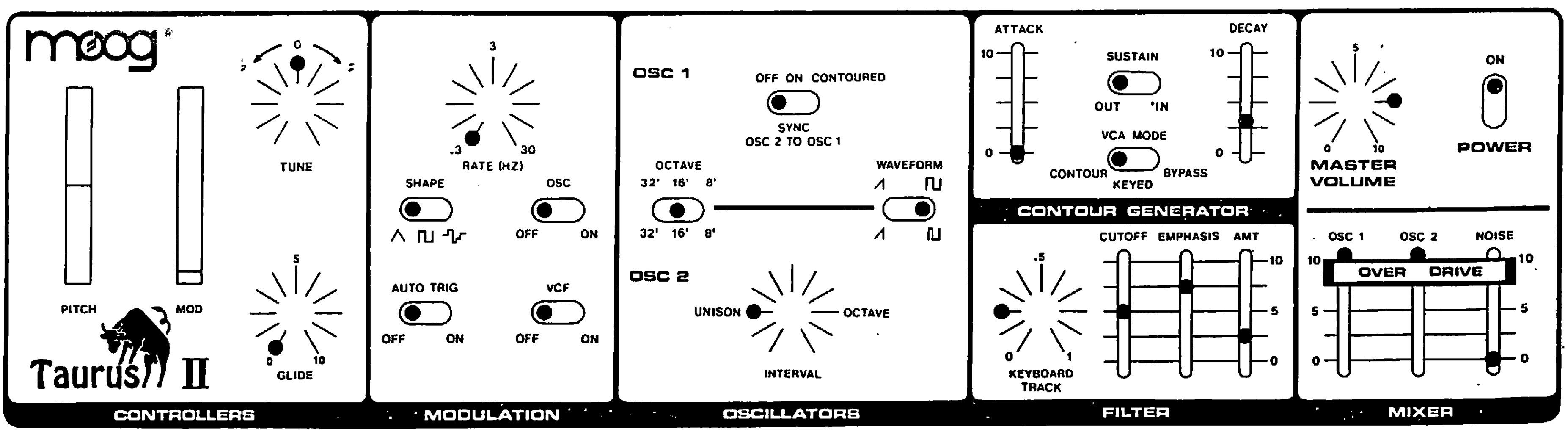

BASS VI



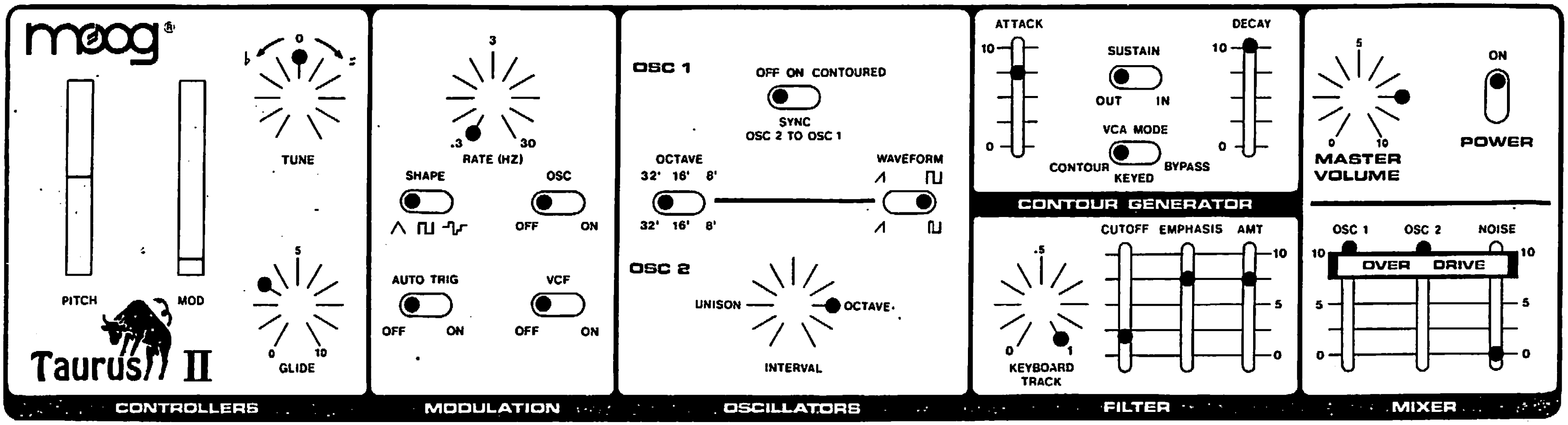
BASS VII



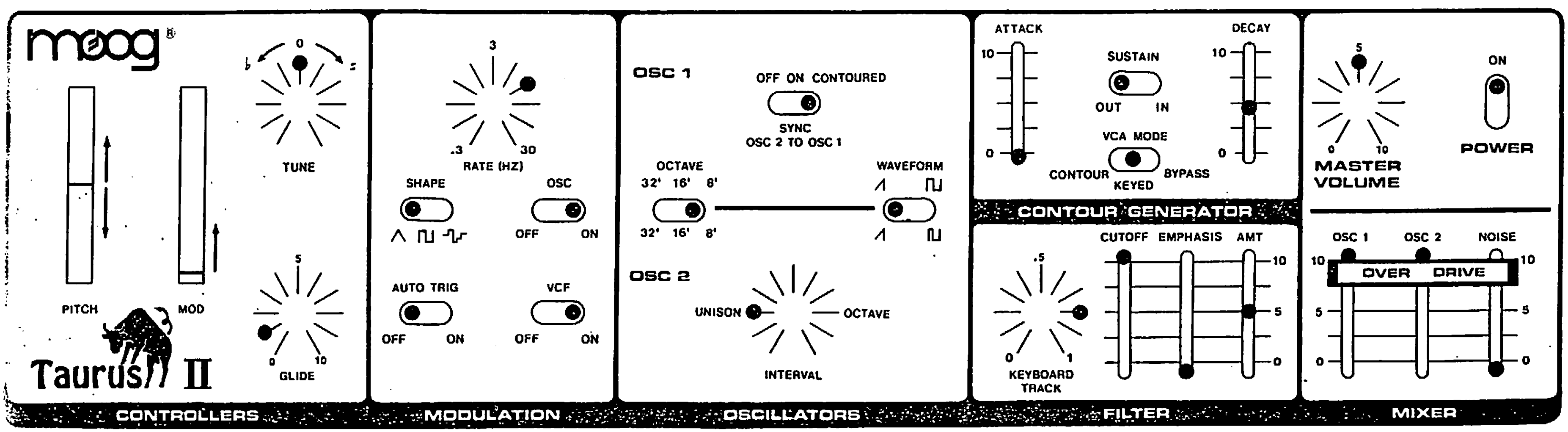

BASS VIII



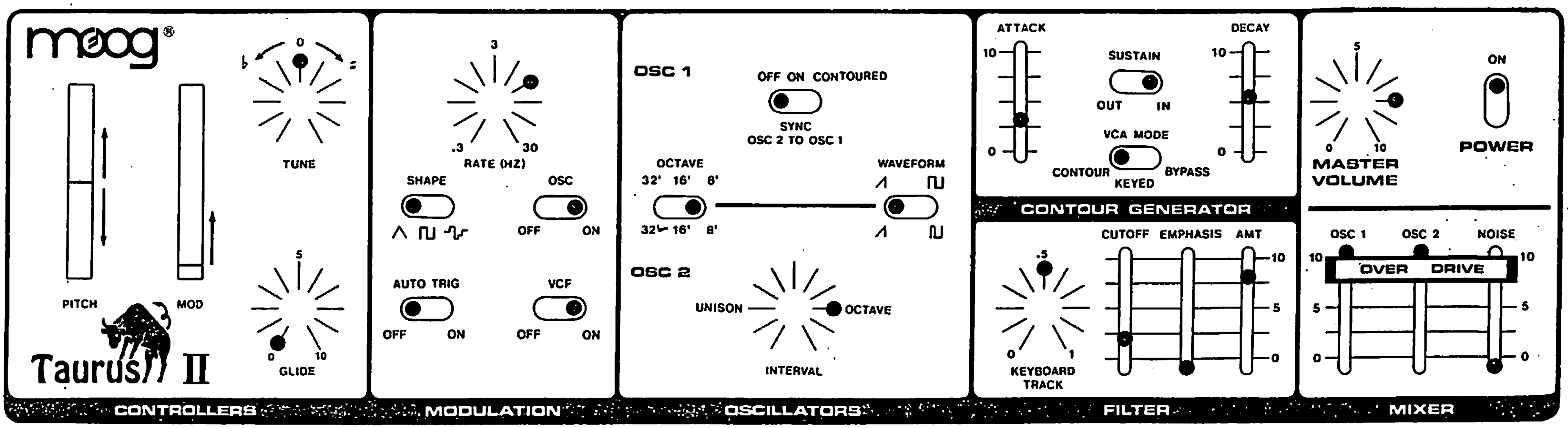
BASS IX



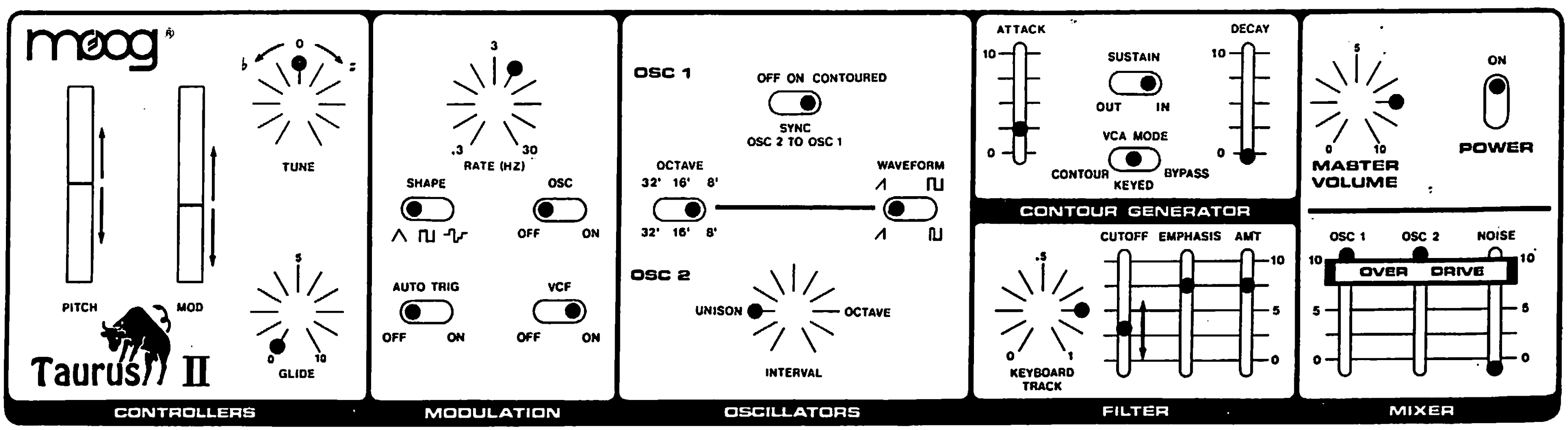

SOLO I



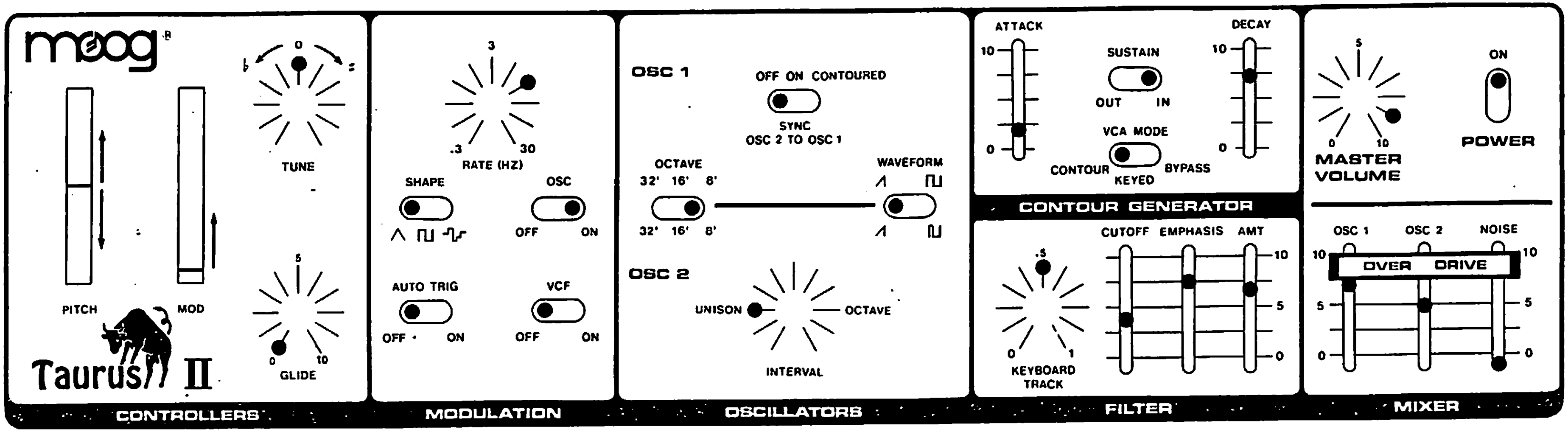
SOLO II



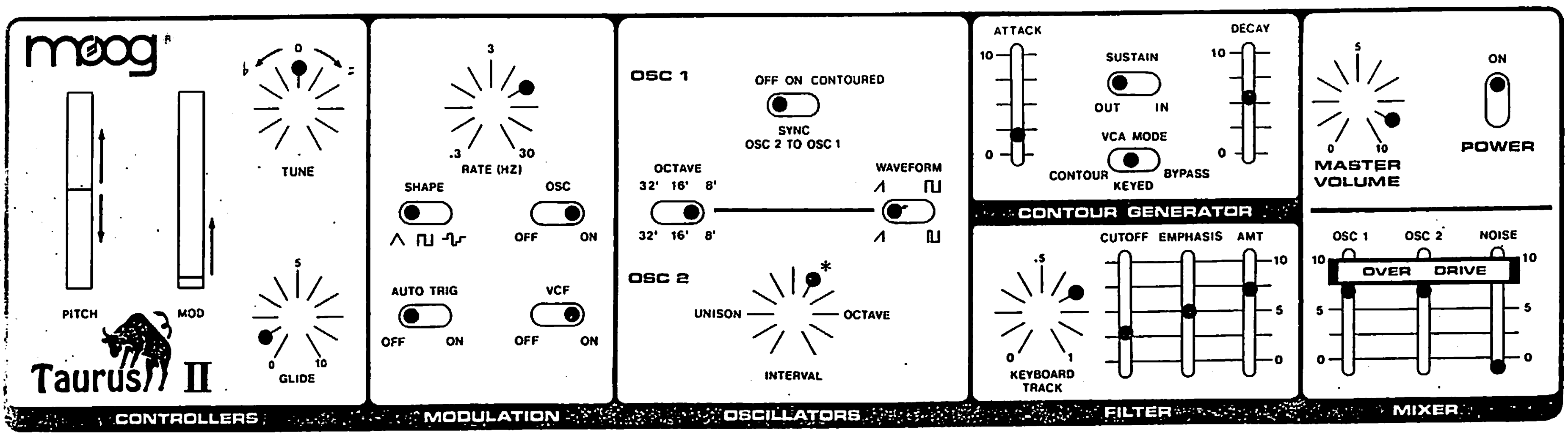

SOLO III



SOLO IV

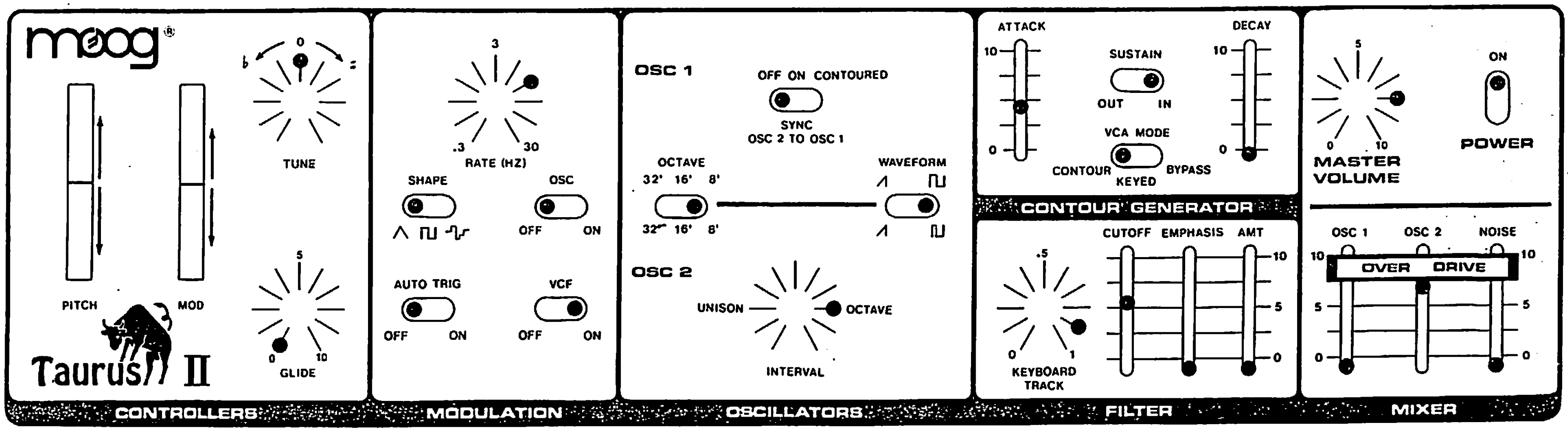



SOLO V

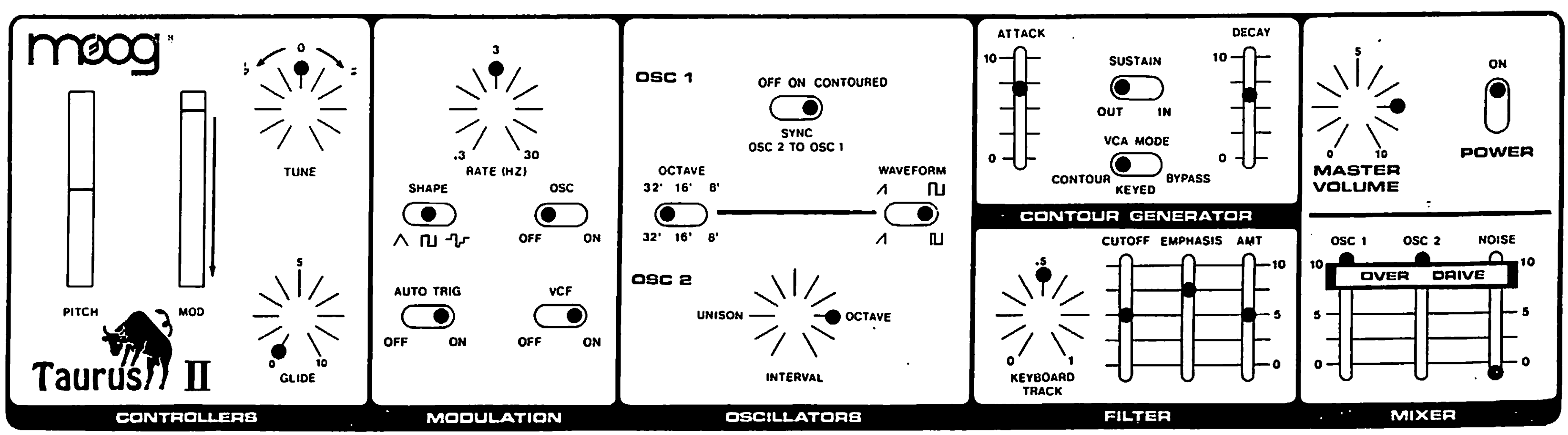



* Tune to a perfect fifth

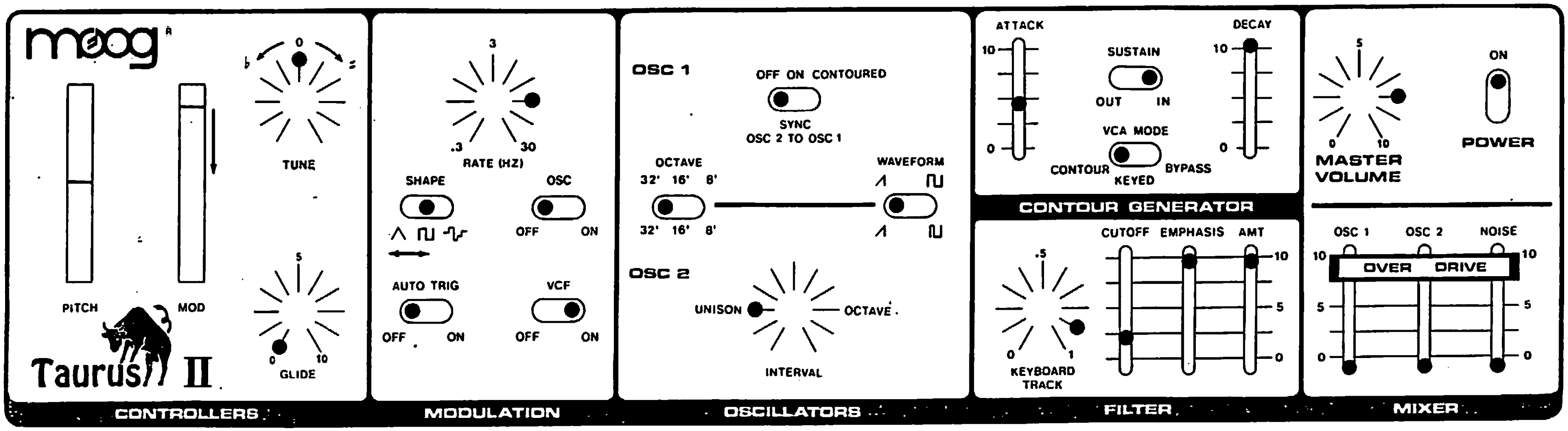
## SOLO VI



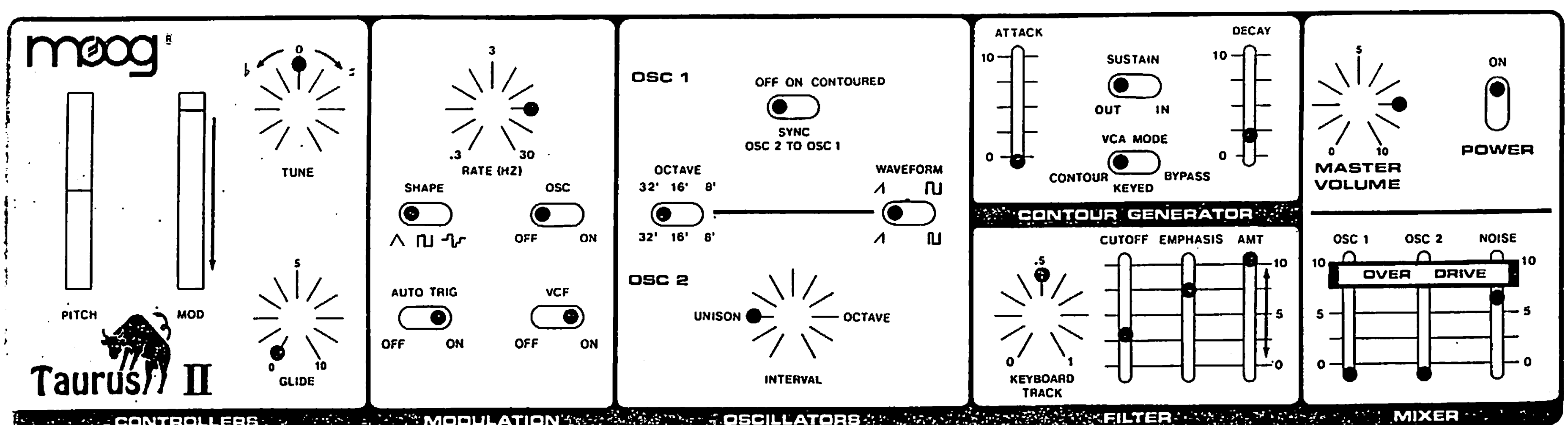

## SOUND EFFECTS I



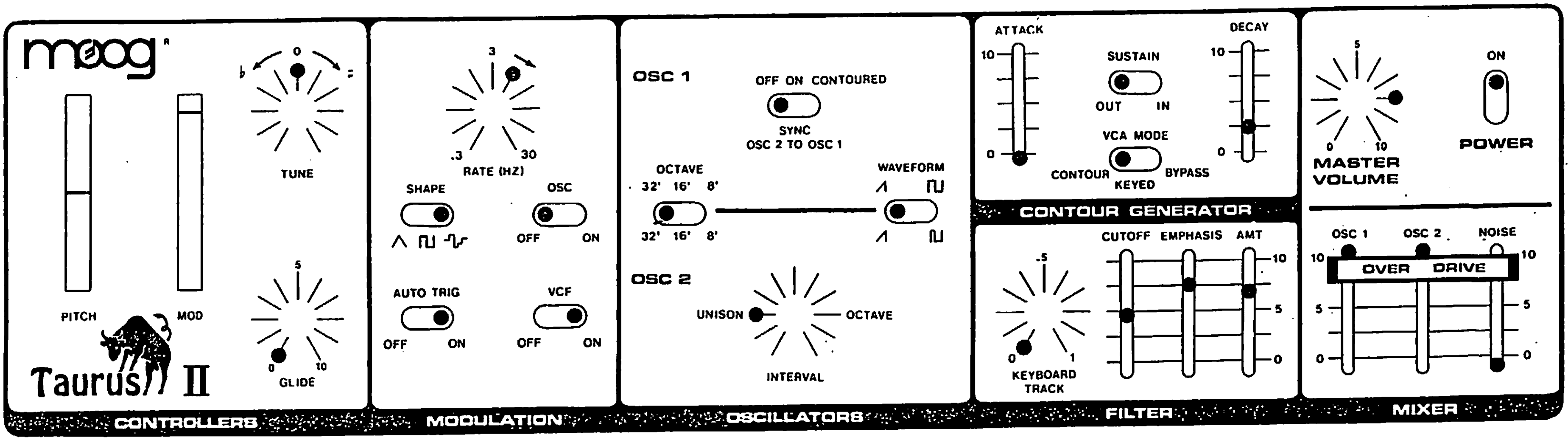
## SOUND EFFECTS II



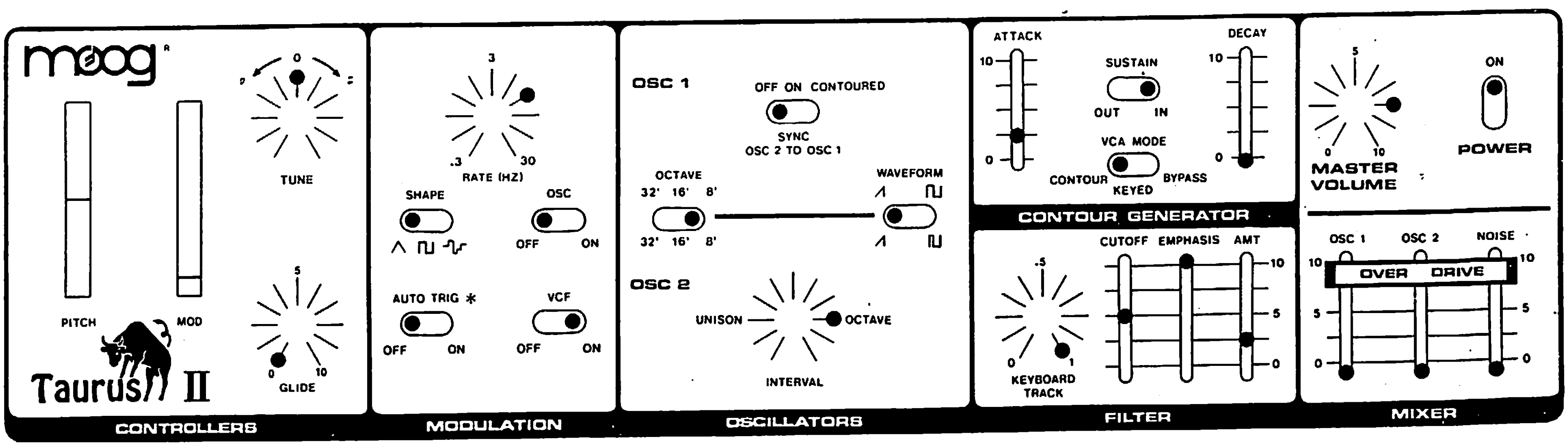

## SOUND EFFECTS III



## SOUND EFFECTS IV

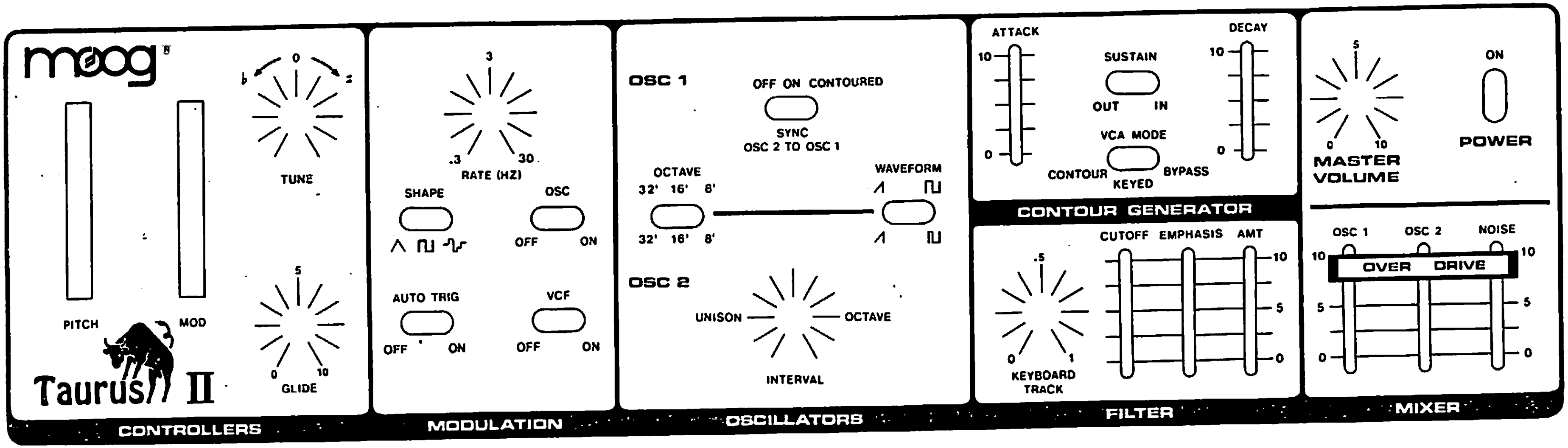


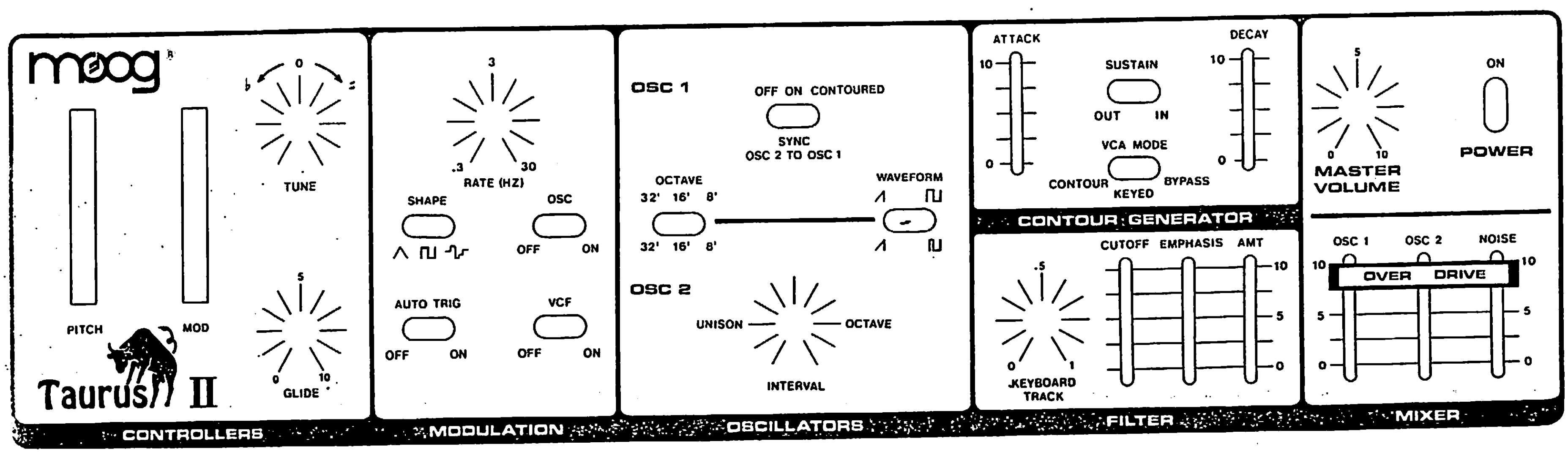

## SOUND EFFECTS V




* Switch ON Auto Trig to introduce repetitive effect

Use pedals to vary pitch


moog
Taurus II
PITCH
MOD
TUNE
GLIDE
CONTROLLERS
RATE (HZ)
SHAPE
OSC
OFF
ON
AUTO TRIG
VCF
MODULATION
OSC 1
OFF ON CONTOURED
SYNC
OSC 2 TO OSC 1
OCTAVE
32' 16' 8'
WAVEFORM
OSC 2
UNISON
OCTAVE
INTERVAL
OSCILLATORS
ATTACK
DECAY
SUSTAIN
OUT IN
VCA MODE
CONTOUR
KEYED
BYPASS
CONTOUR GENERATOR
CUTOFF EMPHASIS AMT
KEYBOARD TRACK
FILTER
MASTER VOLUME
ON
POWER
OSC 1
OSC 2
NOISE
OVER DRIVE
MIXER

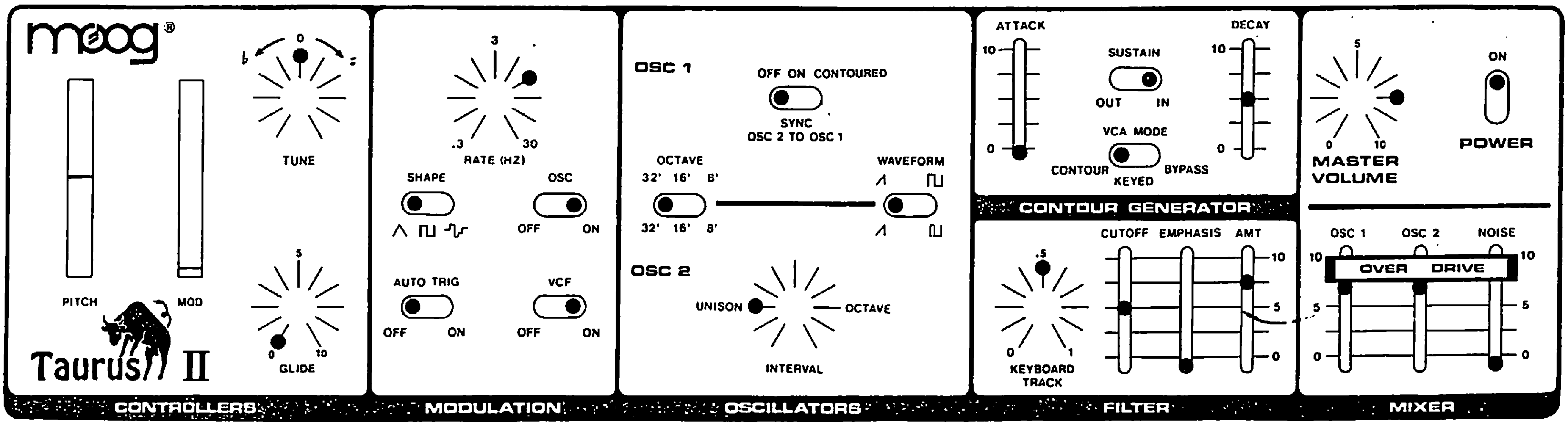

moog
Taurus II
PITCH
MOD
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OSC
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ATTACK
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SUSTAIN
OUT IN
VCA MODE
CONTOUR
KEYED
BYPASS
CONTOUR GENERATOR
CUTOFF EMPHASIS AMT
KEYBOARD TRACK
FILTER
MASTER VOLUME
ON
POWER
OSC 1
OSC 2
NOISE
OVER DRIVE
MIXER

SECTION 5

# GETTING TO KNOW TAURUS II

One of the best ways to become familiar with an instrument is to experiment with it. So rather than explain in detail how each control works, let's just look at each function of the front panel and listen to the influence it has on the sound.

## A STARTING PATCH




Here is a patch to provide a convenient starting point.

The control panel is laid out in six separate sections:

1. Controllers
2. Modulation
3. Oscillators
4. Contour Generator
5. Filter
6. Mixer and Final Output

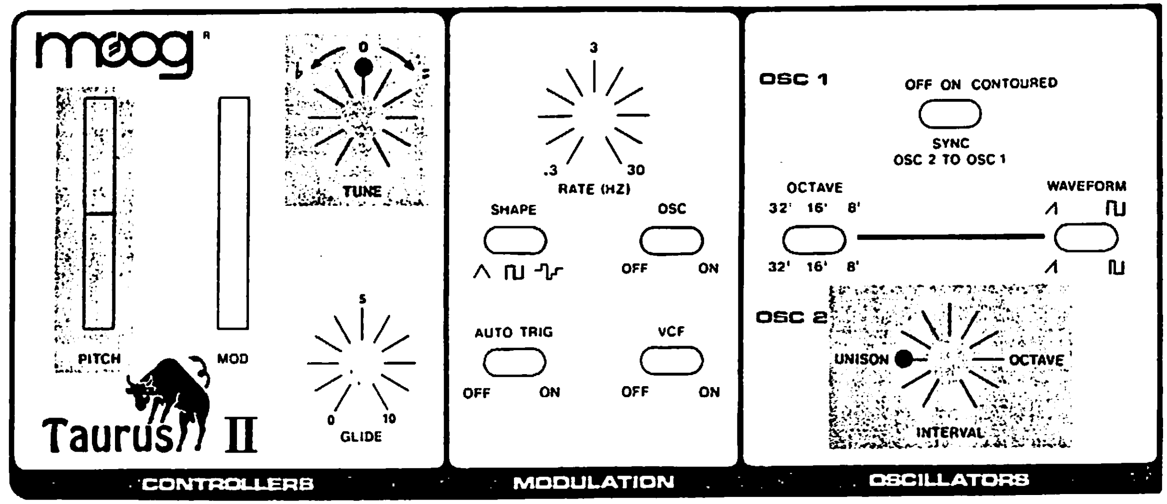
*a User Tip*

Remember, if you get stuck, return to the Starting Patch and try again.

## TUNING

Once you have set up the starting patch:

1. Set the INTERVAL control at UNISON and, if needed, adjust it until Osc 2 is tuned to Osc 1. (No beating should be heard.)
2. If you wish to tune Taurus II to another instrument, adjust the TUNE control accordingly (again no beating effect should be heard).



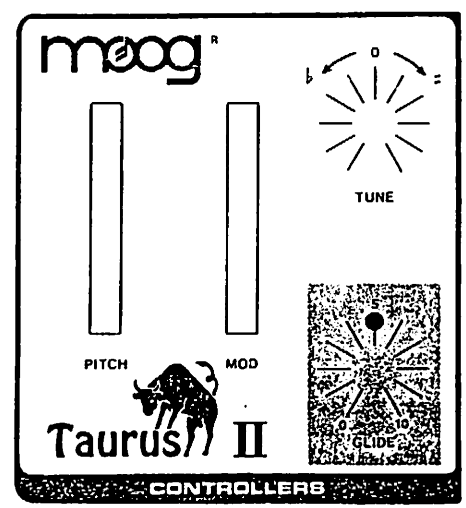

*a User Tip*

Check that the pitch wheel is in its center notched position.

## GLIDE

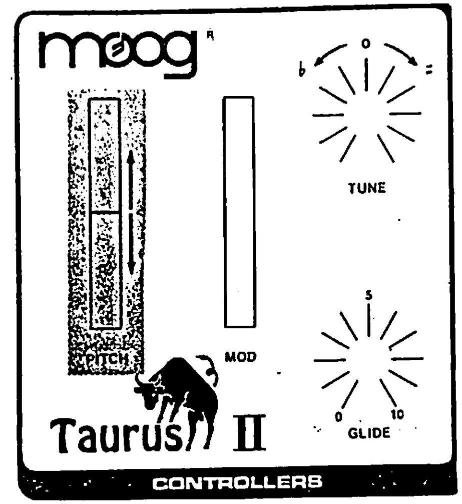
It's a good idea to sit down for this exercise as you'll need both feet on the pedal board.

1. Starting Patch.
2. Set the GLIDE control to 5, play a high note and while holding this note down depress the lowest pedal. Note how the pitch glides down to the pitch of the lowest note.
3. Using the same pedal techniques, experiment with different settings.



PITCH WHEEL

Expression is a very important aspect of producing music on a musical instrument. With the synthesizer, expression can be introduced by using the Pitch and Modulation wheels.




Experiment — get to know the feel of the wheel, how far it should be moved.

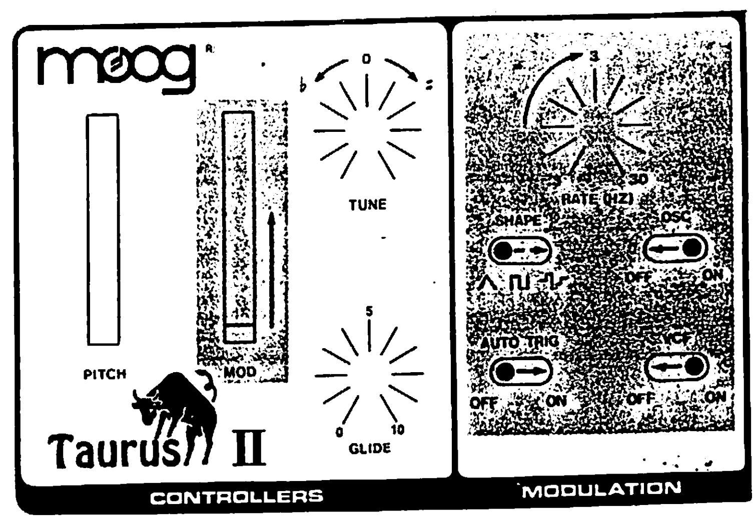
1. Starting Patch.
2. The wheel has a neutral center notched position. Check to feel the wheel is in its center position.
3. Moving the Pitch Wheel upwards bends the pitch up; moving the wheel downward bends the pitch down.
4. Return the wheel to its center position.

Moving the Pitch Wheel just small amounts can bend the pitch in subtle expressive ways. Small pitch glides can also be achieved using the Pitch Wheel. Even rocking the Pitch Wheel around its notched central position can produce interesting modulation of pitch. Large continuous movements of the Pitch Wheel will create sound effects.

You can even transpose melody lines by leaving the wheel set at a desired interval.

MODULATION WHEEL

The Modulation Wheel works in conjunction with the various controls in the Modulation section.




1. Starting Patch.
2. Moving the Mod Wheel upwards introduces modulation. Play a note and listen to the following effects:
3. Adjusting the RATE (Hz) control (at the top of the Modulation section) will speed up or slow down the modulation rate.
4. Leave the Mod Wheel in a central position, and switch OFF the OSC switch. You now have only filter (VCF) modulation or tremolo.

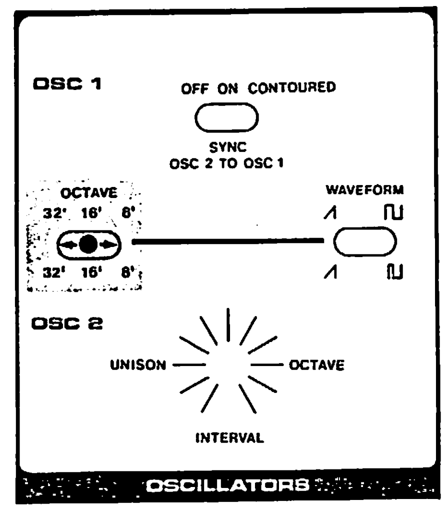
5. Now switch OFF the VCF switch and turn ON the OSC switch. This is pitch modulation (vibrato).

6. Switch SHAPE from ( /\ ) Triangle to ( ⊓ ) Square Wave. Listen to the difference. Now move the 3-position switch to ( random ) Random Waveshape. This is a popular sound effect "sample and hold." While leaving this effect on, switch the AUTO TRIG switch to ON. The sample and hold effect will now play continuously.

7. Experiment trying out different combinations of switches, varying degrees of Mod amount from the Mod Wheel and varying amounts of RATE.

## a User Tip

Remember, if you get stuck, return to the Starting Patch and try again.




## OSCILLATOR OCTAVES

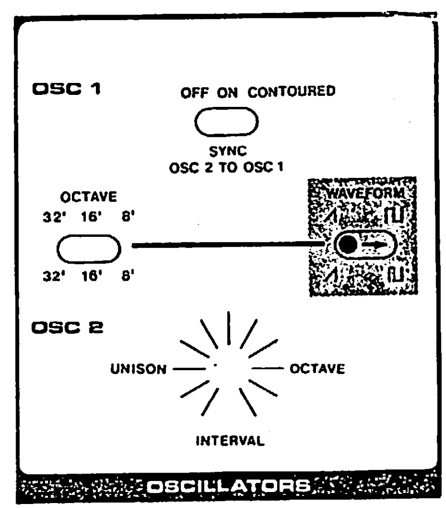
The oscillators are the heart of a synthesizer. This is where pitched sound is generated.

1. Set up the Starting Patch. OCTAVE is at 16'.

2. Move the switch left to 32'. Notice the pitch of the Taurus II is now an octave lower.

3. Moving the OCTAVE switch to the right to 8' will raise the pitch two octaves.

(The OCTAVE switch controls the pitch of both oscillators.)




## OSCILLATOR WAVEFORM

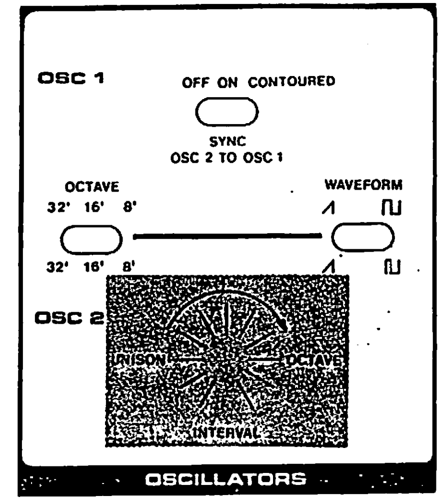
1. Set up the Starting Patch.

2. Move the WAVEFORM switch to the right. Note the different tone color.

3. The WAVEFORM switch controls the waveform for both oscillators.

## OSCILLATOR 2 INTERVAL

1. Set up the Starting Patch.
2. Turn the INTERVAL control from UNISON to OCTAVE. (This moves the pitch of OSC 2 one octave above OSC 1.) Gently moving the control, listen until the beating effect disappears. Fine tuning will ensure a perfect octave interval.
3. Now experiment with finding intervals between UNISON and OCTAVE. Setting the oscillators at intervals enriches the tone quality. Settings of a perfect fifth or fourth are frequently used because of the organ-like tone colors created.




Moving the Interval control left of UNISON will give OSC 2 intervals below the pitch of OSC 1.

*a User Tip*

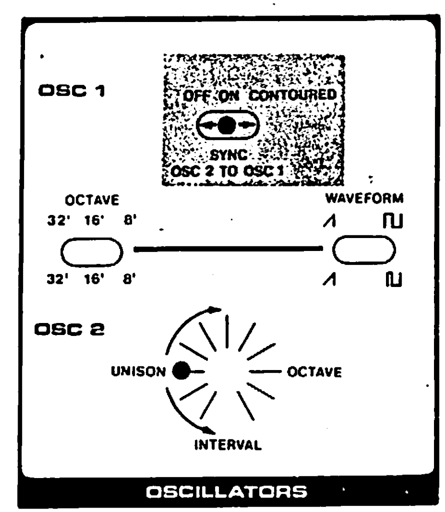
Remember to return the Interval control to UNISON when completing this exercise. Notice once more that the "beating effect" will disappear when the two oscillators are exactly in tune. However, slow beating (slight detuning) does produce a fatter sound.

## OSC SYNC (OSC 2 TO OSC 1)

1. Set up the Starting Patch.

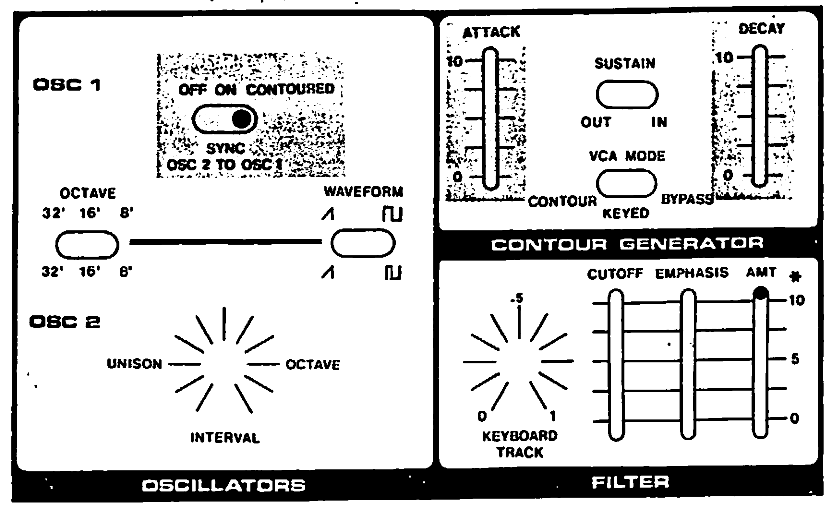
The OSC SYNC switch has three positions. In the OFF position, the Oscillators are not synchronized and may be detuned as above.

2. Move the switch to ON (the second position).
3. No difference will be heard until you turn the INTERVAL control. Notice the changing tone color while moving this control. Experiment with different settings.
4. Return the INTERVAL control to the UNISON position. (An exact position is not required at this stage.)
5. Now move the SYNC switch right to CONTOURED. (Refer to Contoured Sync section on the following page.)



## CONTOURED SYNC

Look at the Contour Generator section. The ATTACK and DECAY sliders will affect the tone color in this exercise.




1. First, listen to the original sound.
2. Now move the ATTACK slider upward halfway to "5" and repeatedly depress and release a pedal.
   Notice that the tone color changes automatically.
3. Experiment with different settings.
4. Now leave the ATTACK at 0 and try out different settings with the DECAY slider. Listen for the different changes of tone color.

By now you will realize these controls affect the timing of tone changes.

* Filter AMT slider should be at 10 for maximum effect.

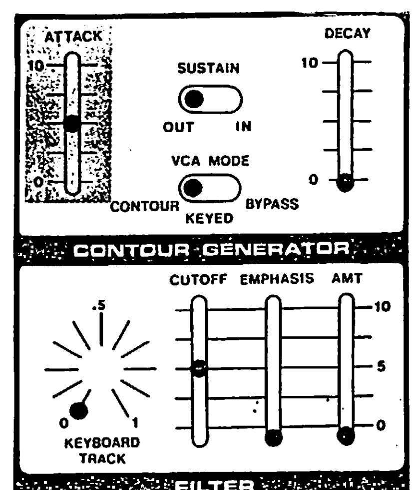
### User Tip

After using the INTERVAL control with SYNC, don't forget to retune after placing the SYNC switch in the OFF position.

## CONTOUR GENERATOR

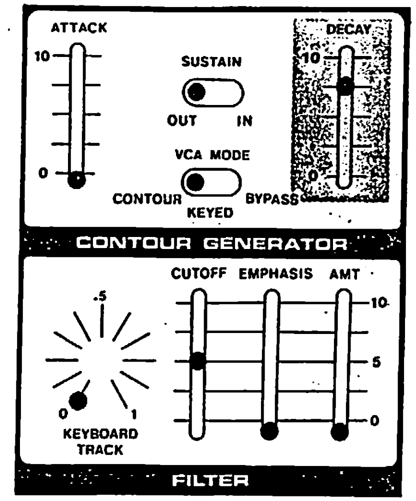
### ATTACK (Rise)

1. a) Starting Patch.
   b) Set Contour controls and filter as shown:



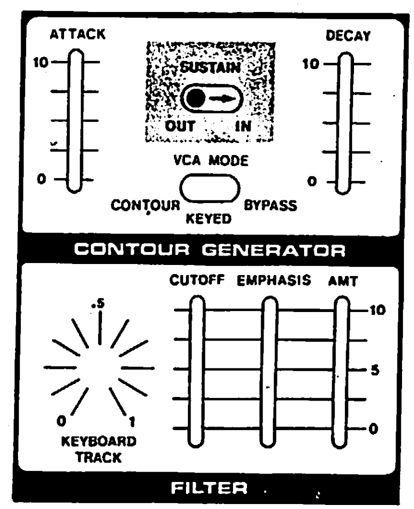

2. Depress a pedal and listen to the way the note builds in volume; as soon as the pedal is released, the note stops sounding.
3. Move the ATTACK slider to 10 and depress a pedal. The note takes longer to build its volume.
4. Now experiment by setting the ATTACK control in various positions.

## DECAY (Fall)




1. a) Starting Patch.
   b) Set Contour controls and filter as shown:
2. Depress and immediately release a pedal. Notice the sound takes some time to fade away. This length of time is called *decay* time.
3. Experiment with different settings of the DECAY slider.
4. Now combine different settings of ATTACK and DECAY until you feel confident about the affect these controls have on the sound.

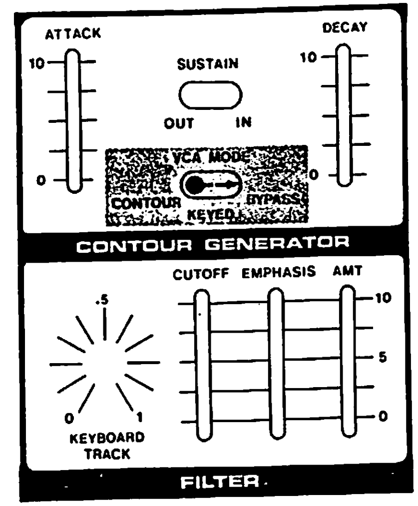
## SUSTAIN




1. Starting Patch.
2. Switch off the SUSTAIN switch.
3. Depress a pedal and listen to the sound.
4. Now switch in SUSTAIN and listen to how the note holds loudness and brightness at its peak while the pedal is depressed and then falls off at the Decay time when the pedal is released. Try maximum DECAY time (10) to emphasize this example.
5. Experiment with different Decay levels.

## VCA MODE

1. Starting Patch.
2. In the Contour position, the Attack and Decay times are controlled by the ATTACK and DECAY sliders.
3. Move the switch to KEYED center position. Play and release low C. This note ends abruptly. In this mode, a note will only sound as long as a pedal is held down.
4. In the third position BYPASS, the notes will continuously sound. Move the switch back to the KEYED position to stop the notes from playing.



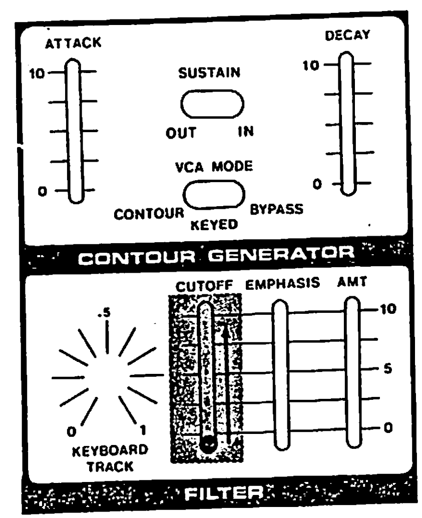

### a User Tip

In the CONTOUR mode the ATTACK and DECAY sliders control both the loudness and brightness of the sound.

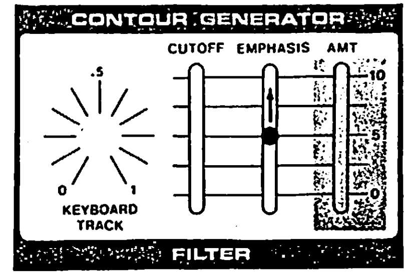
## FILTER SECTION

### CUTOFF (Brightness)

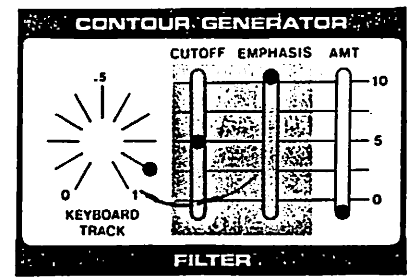
1. Starting Patch.
2. Depress the low C pedal.
3. Move the CUTOFF slider to 10 and listen to the sound become much brighter. Cutoff acts like a tone control for brightness. Experiment with different settings.



EMPHASIS

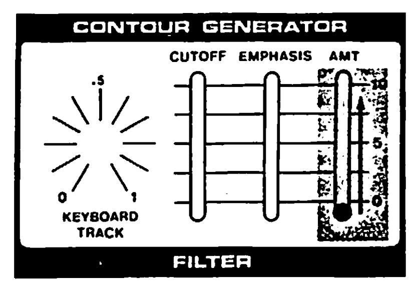



1. Starting Patch.
2. Depress a pedal.
3. Move the EMPHASIS slider to 5, then 7.5. Notice how the sound becomes thinner and more nasal.
4. Watch your volume setting if you move the EMPHASIS slider between 7.5 and 10. At this level the filter feeds-back to produce a high-pitched whistling (just like a microphone feedback). Actually, what has happened is the filter has become another sound source, producing a very pure sound. This source itself may be useful for certain effects. See Sound Effects II and V.




5. Set up the following patch on the filter.
6. Depress low C and move the CUTOFF slider. Notice it controls the pitch of the sound.
7. Play top C and notice the pitch is also controlled by the pedal board. To obtain an exact tuning from bottom C to top C, the KEYBOARD TRACK control may have to be adjusted.
8. Now experiment with various CUTOFF and EMPHASIS settings. These two controls interplay to produce subtle to obvious tone changes. They play an important part in the overall sound quality.

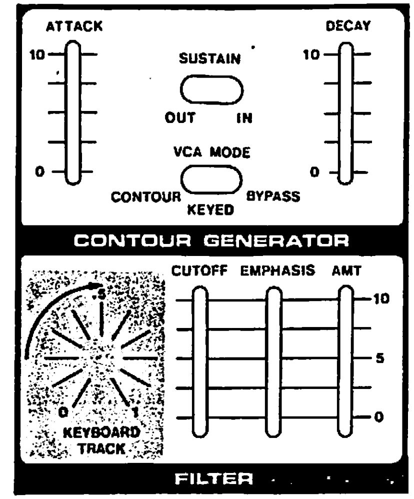
AMT (Amount)




1. Starting Patch.
2. Depress a pedal.
3. Move the AMOUNT slider to 0. Notice how the tone color drastically changes, just like it did with the Cutoff slider. The AMOUNT slider adjusts the amount of Contour controlling the Cutoff (brightness). Therefore, the Attack and Decay sliders and the Sustain switch affect the filter (tone color).
4. Move the AMOUNT slider to 10. Now play various notes and experiment with the Attack and Decay sliders in the Contour Generator section.

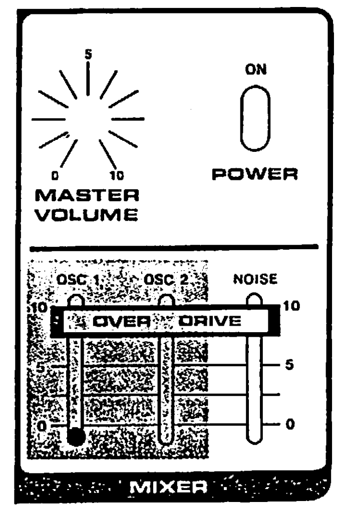
## KEYBOARD TRACK

1. Starting Patch.
2. Set the AMT slider to 0.
3. Depress the lowest then the highest pedal. Note the even tone color.
4. Turn the KEYBOARD TRACK to maximum 10. Play the lowest and highest pedals and now notice the difference in brightness between the low and high notes. It is often desirable to boost the brightness of high notes in order to make them stand out more for melodic reasons.

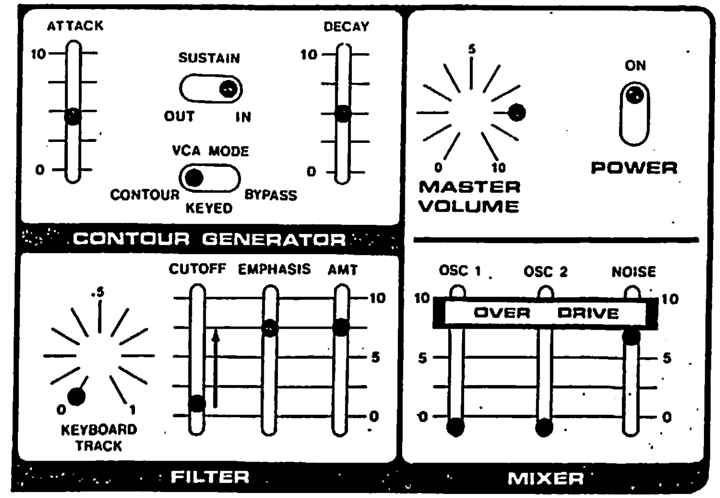



## MIXER SECTION

1. Starting Patch.
2. Move OSC 1 slider to 0. Depress a pedal and you will hear only OSC 2.
3. Move OSC 2 slider to 0 and return OSC 1 slider to 7.5. Now only OSC 1 will be heard. The level of each oscillator can be mixed to achieve the balance you require.
4. Moving OSC 1 or OSC 2 sliders to 10 will introduce a small amount of distortion to produce a "beefier" (fatter) sound.

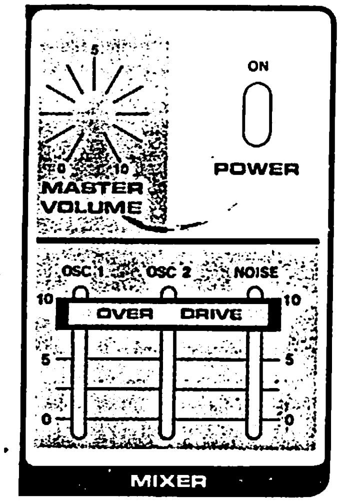


## NOISE




1. Set both OSC 1 and OSC 2 sliders to 0 and raise the NOISE slider to 5 as indicated:
2. Depress a pedal and you will hear a non-pitched sound.
3. By moving the CUTOFF slider, wind or surf-like effects can be achieved (see example, Sound Effects III). Also, other percussive sounds can be created using the Attack and Decay sliders in conjunction with the filter. Experiment.

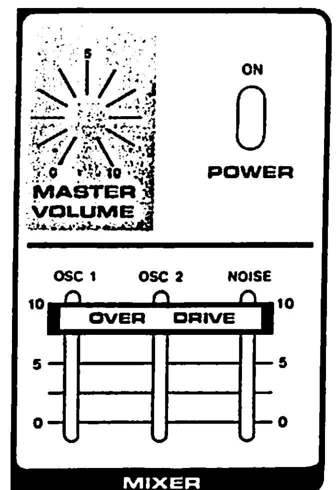
## OVERDRIVE




This circuit is similar to the Minimoog mixer section where setting Oscillator level controls at maximum also produces overdrive, a slight distortion, a desirable addition to fatten the sound even more.

1. Set the sliders for OSC 1 and OSC 2 in the Mixer section to 5 and set the MASTER VOLUME to 10. Play low C and listen to the sound.
2. Set the sliders for OSC 1 and OSC 2 to 10 and set the MASTER VOLUME to 8. Play low C and notice the sound has more power because of the distortion. This fat sound is very popular with the Minimoog and is used on many recordings.

## MASTER VOLUME




This control sets the overall loudness of the instrument. For best results, try to use the individual Oscillator level controls as high as possible and then set the MASTER VOLUME level, to optimize the quality of sound.

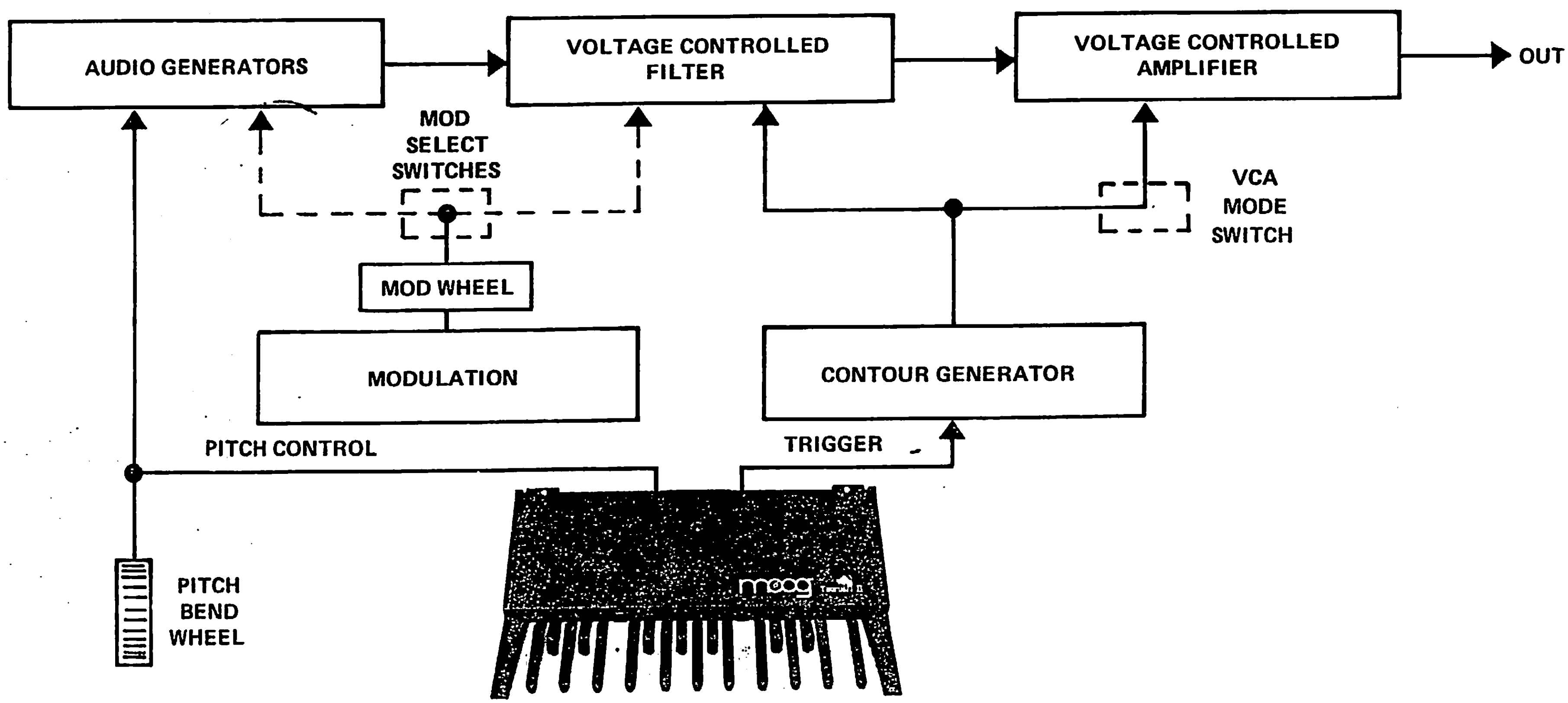
## SECTION 6

## A CLOSER LOOK AT TAURUS II

How are the functions of Taurus II organized?

The best way to think of any synthesizer's functions is to think of the whole thing as a *modular* instrument. A *module* may best be defined as an individual part that has its own special purpose. To understand and use a synthesizer correctly, you need only to understand each of its modules. The "connecting" of one module to another is easily done with the switches and controls on Taurus II.

### BASIC SYNTHESIZER FLOW CHART



To begin with, there are four basic modules on every synthesizer:

1. Audio Generators (oscillators, noise generator)
2. Modifiers (filter and modulation sections)
3. Articulators (contour generator and voltage-controlled amplifier)
4. Performance Controllers (pedalboard, pitch bend wheel)

What are audio generators?

The audio generator portion of Taurus II consists of two oscillators and a noise generator. The *oscillators* produce electrical waveforms with variable shapes and frequencies that you can control for different tone colors or pitches. The *noise generator* produces a non-pitched signal that can be used for percussion, wind or surf-like sounds and many other effects.

Both oscillators produce sawtooth waveforms ( /|/| ). Oscillator one also produces a square wave ( ⊓⊔ ) and oscillator two produces a narrow pulse wave ( ∩⊔ ).

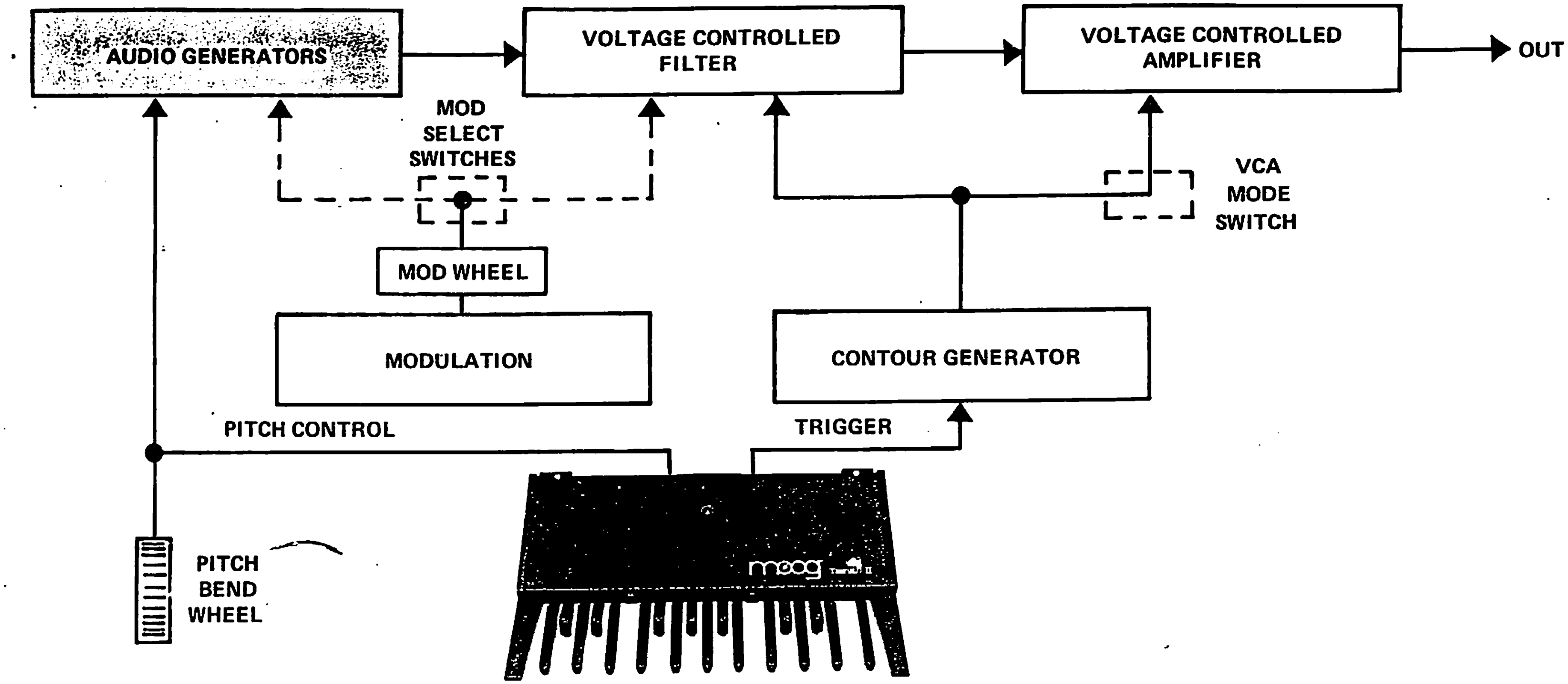
The octave switch provides a 3-octave range for both oscillators. In addition, oscillator two may be tuned up to one octave higher than oscillator one.

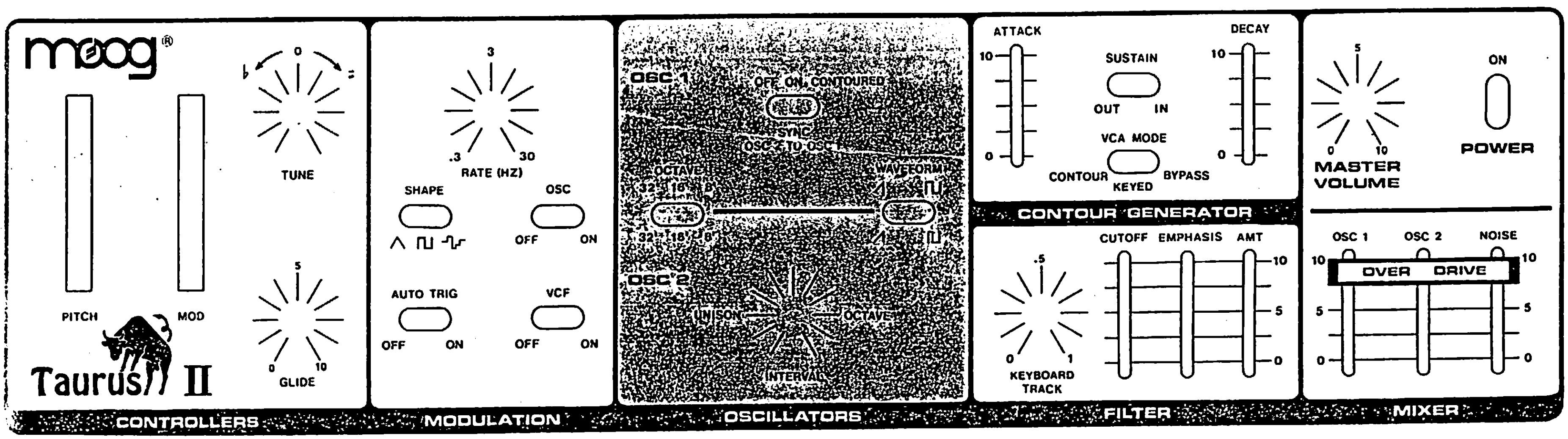
The "detuning" of oscillator two is done by first switching the SYNC switch OFF, then turning the INTERVAL knob to the desired position.

When the SYNC switch is turned ON, the pitch of oscillator two will be locked in synchronization to that of oscillator one.

When the SYNC switch is turned to CONTOURED, the settings on the contour generator will change the spectrum of oscillator two. However, since the two oscillators are locked in synchronization, this frequency sweeping will cause a rapid change in the output waveform, creating unusual "screaming" effects. This is a unique sound on Taurus II; it can be heard clearly on the Bass III Sound Chart on page 8, and the Bass VII Sound Chart on page 11.

# THE AUDIO GENERATORS




The shading on the above panel shows the location of the audio generator portion of Taurus II.

What are the modifiers?

There are two types of modifiers used on Taurus II, and since each has a very separate purpose, it would be best to look at them one at a time.

1. Filter

This module changes the tone color of the sound produced by the audio generators. It does so by adding or reducing the amounts of high frequencies present in the signal. This is controlled by the CUTOFF slider.

In addition, EMPHASIS may be added to increase the effect of the filter's function, and the CUTOFF can be controlled further by the pedalboard and contour generator. EMPHASIS amplifies a narrow band of frequencies surrounding the cutoff point.

Raise the AMOUNT slider to increase the effect of the *contour* on the filter CUTOFF.

The KEYBOARD TRACK control may be adjusted from "0" (no effect of the notes played on the pedalboard is heard in the filter) to "1" (full control of the filter by the pedalboard).

A great many unusual tone colors may be produced using the filter, and a complete understanding of its function will give you control over an almost infinite variety of musical sounds.

2. Modulators

Modulation means *change*. The use of the modulators will give you unusual changes in the outputs of the audio generators or filter. As the performer, you will be able to control the amount of these changes, the speed of the changes, and the portions of the synthesizer that may be affected by these changes.

The modulation section of Taurus II provides such effects as *vibrato, tremolo, automatic repetition* and *sample-and-hold.*

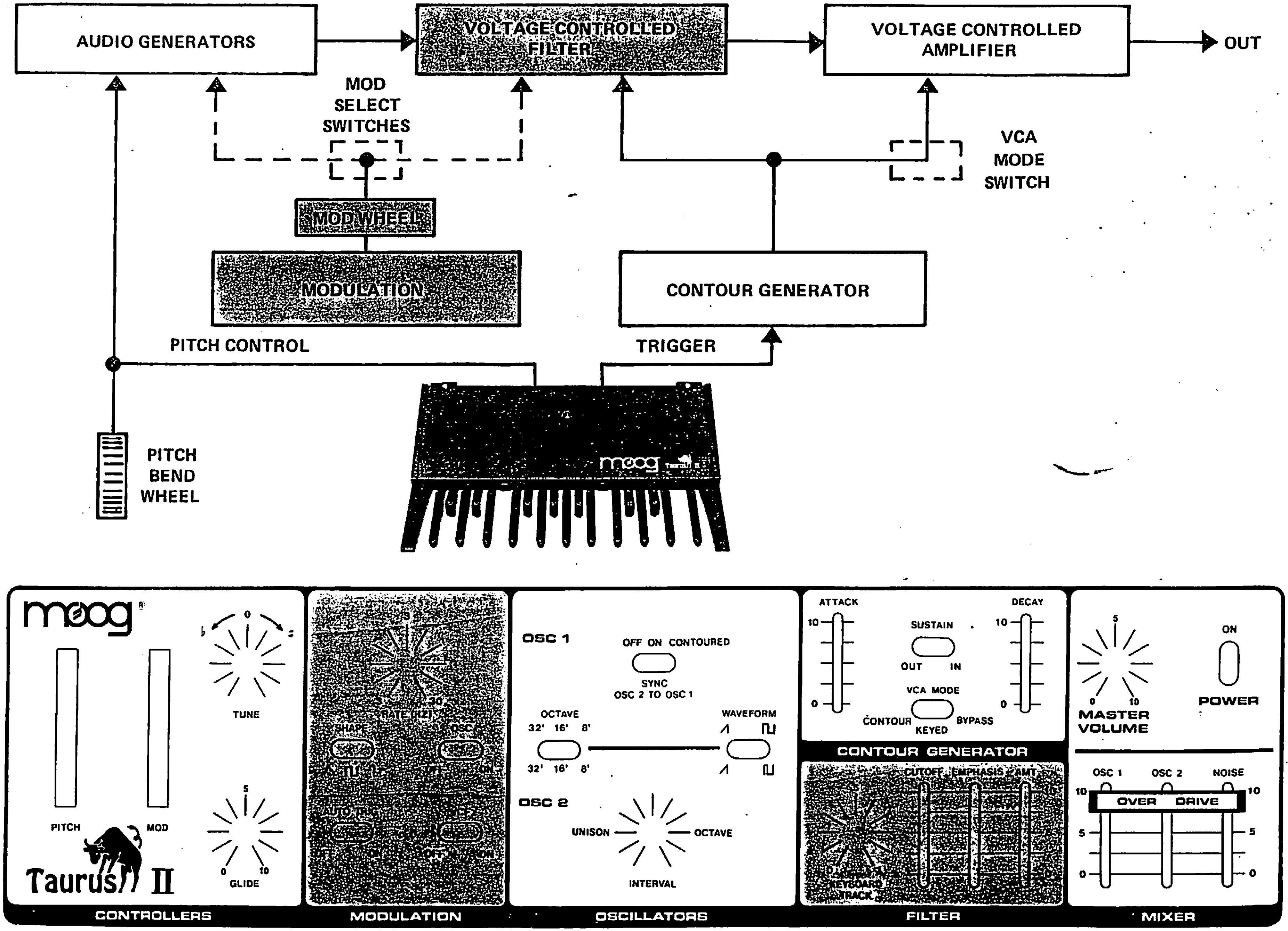
The actual *modulation* is produced by a low-frequency oscillator (LFO) built into Taurus II. You can control its repetition rate with the RATE knob and its waveshape with the 3-position SHAPE switch.

You may then select to apply this modulation effect to *either* the two oscillators for vibrato or the filter (VCF) for tremolo, *or both.*

Note: The amount of modulation (amplitude) is controlled by the MOD WHEEL. If the wheel is in its lowest position, no modulation effects will be heard.

AUTO TRIGGER will trigger the *contour generator* at each complete cycle of the LFO when turned ON.

For sample-and-hold patterns, select the RANDOM (  ) shape, turn AUTO TRIGGER to ON, route the modulation to OSC and/or VCF and raise the MOD WHEEL fully.




The shading on the above diagram indicates the modulation and filter portions of Taurus II.

What are articulators?

The articulators are those portions of a synthesizer that allow the musician to control the loudness of the instrument, the duration and shape of each tone, and the phrasing desired. On Taurus II, the contour generator controls articulation. It is put into operation each time you depress a pedal on the pedalboard or when triggered by the AUTO TRIG function.

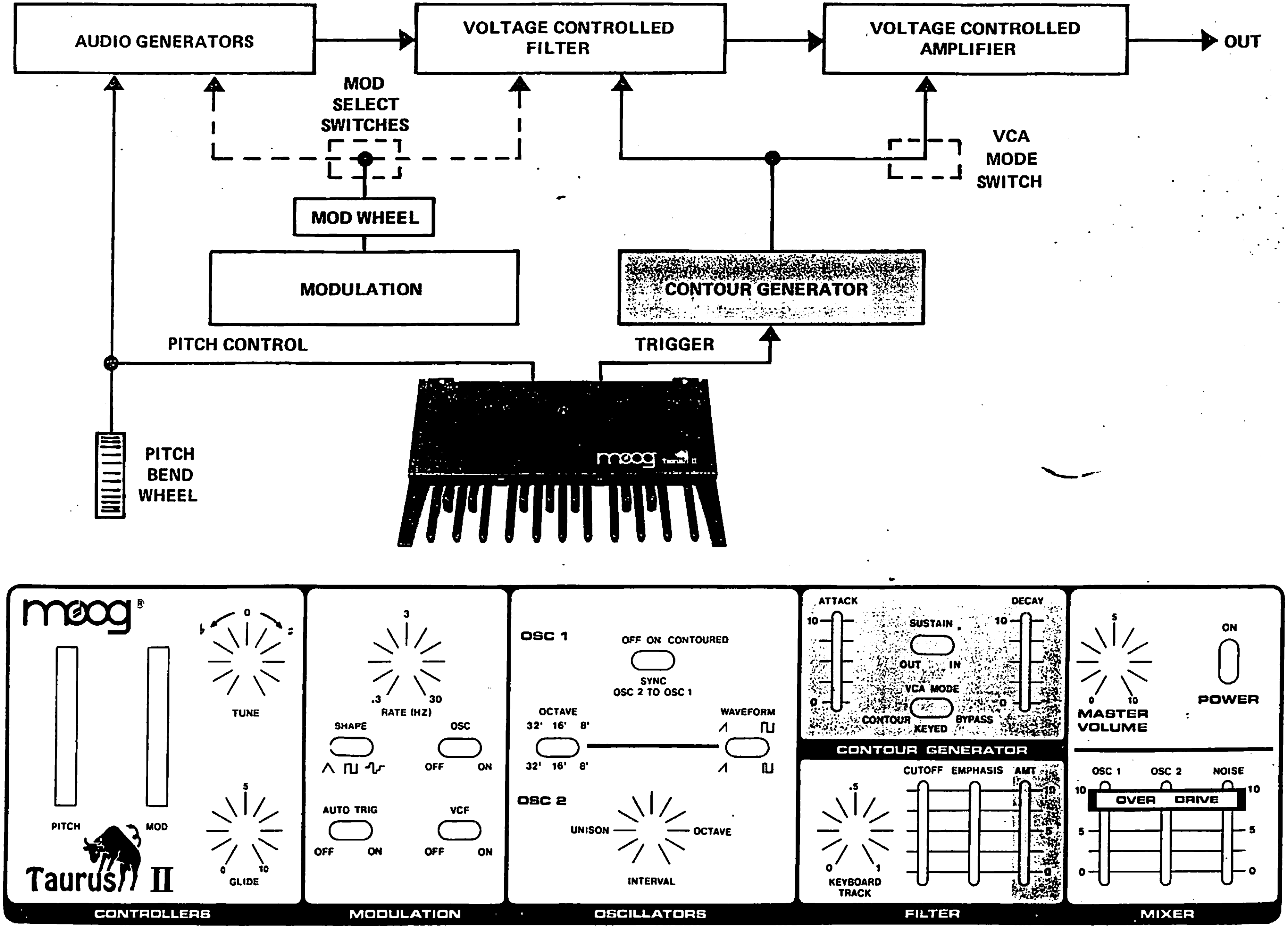
Sliders allow control of both the *attack* and *decay* times. These may be set from fast (0) to very slow (10). *
A SUSTAIN switch holds maximum loudness while a key is depressed.

The contour may be used to control the filter cutoff. This effect is created by raising the AMOUNT slider in the Filter section.

A 3-position switch labeled VCA MODE applies the contour directly to Taurus II's amplifier in position 1, in center position allows the amplifier to be turned ON and OFF by the pedalboard alone, and leaves the amplifier ON at all times in position 3.

*Specific attack and decay times are listed in Taurus II Specifications in the back of this manual.

## THE ARTICULATORS




The shading on the above diagram shows the location of the articulation portion of Taurus II.

What are the controllers?

The two primary controllers on Taurus II are the *pedalboard* and the *pitch wheel*. Each of these will change the frequencies (and therefore the pitches) of the oscillators in the audio portion. The pedalboard can also be used to alter the cutoff of the filter. This is controlled by the KEYBOARD TRACKING knob on the filter section. The pedalboard is also directly connected to the articulation portion of the instrument so that pitch and articulation are controlled simultaneously.

A GLIDE control allows the addition of *portamento* (sliding from note to note) when playing on the pedals. The speed of the glide is adjustable.

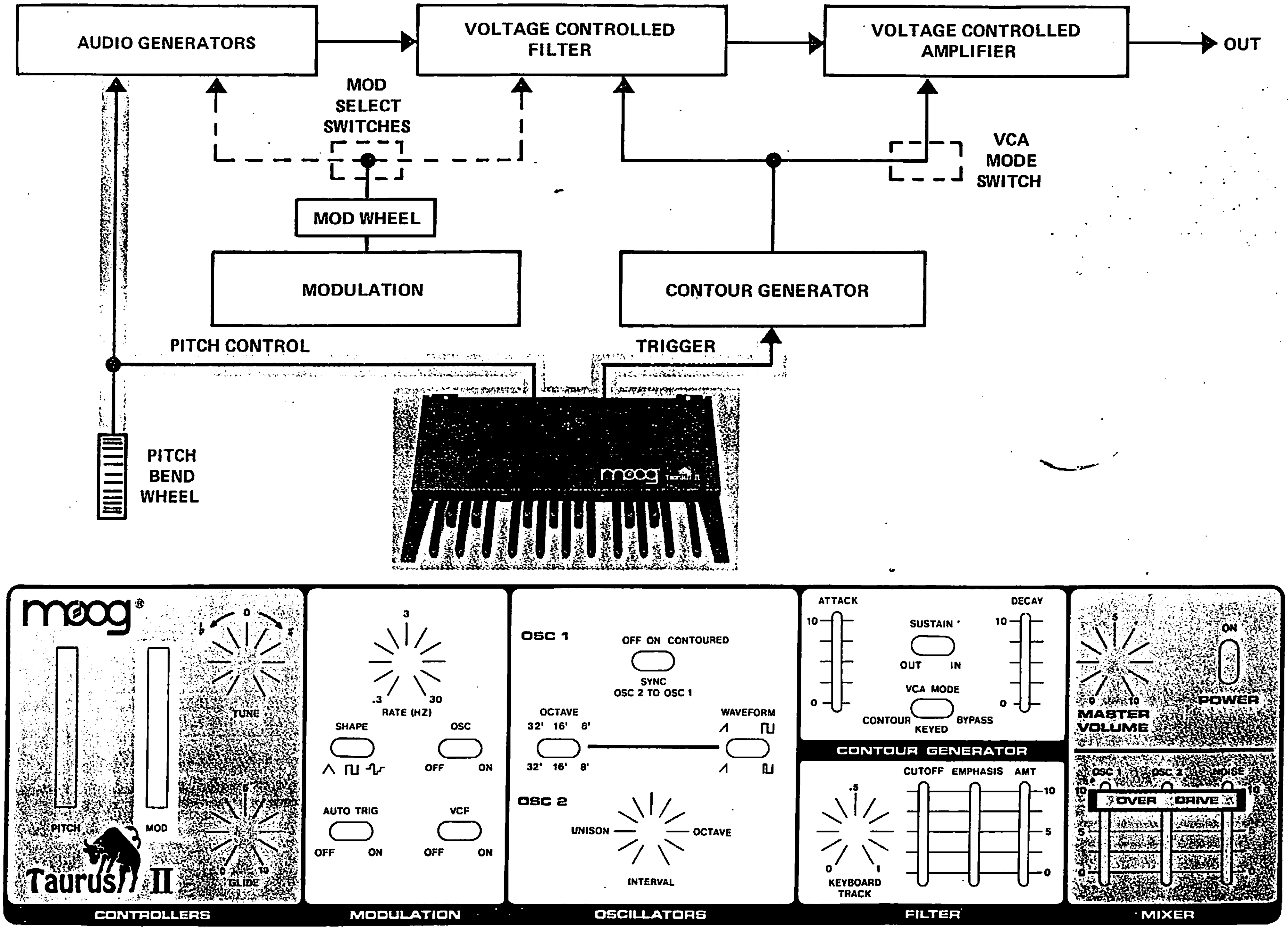
The TUNING knob controls both oscillators simultaneously.

The MIXER allows different levels of each oscillator and/or noise to be combined into the final output (MASTER VOLUME control).

Note: When placed at the upper level (7.5 – 10) the mixer will automatically go into *overdrive*. This is a distortion circuit built into the instrument. *Overdrive* creates a driving sound similar to, but less dramatic than, that of a *fuzz box* or other guitar processors. It also helps to create a fatter sound.

For normal oscillator sound set MIXER at approximately 5.

# THE CONTROLLERS




The shading on the above diagram shows the locations of the controllers on Taurus II.

# SECTION 7

## INTERFACING

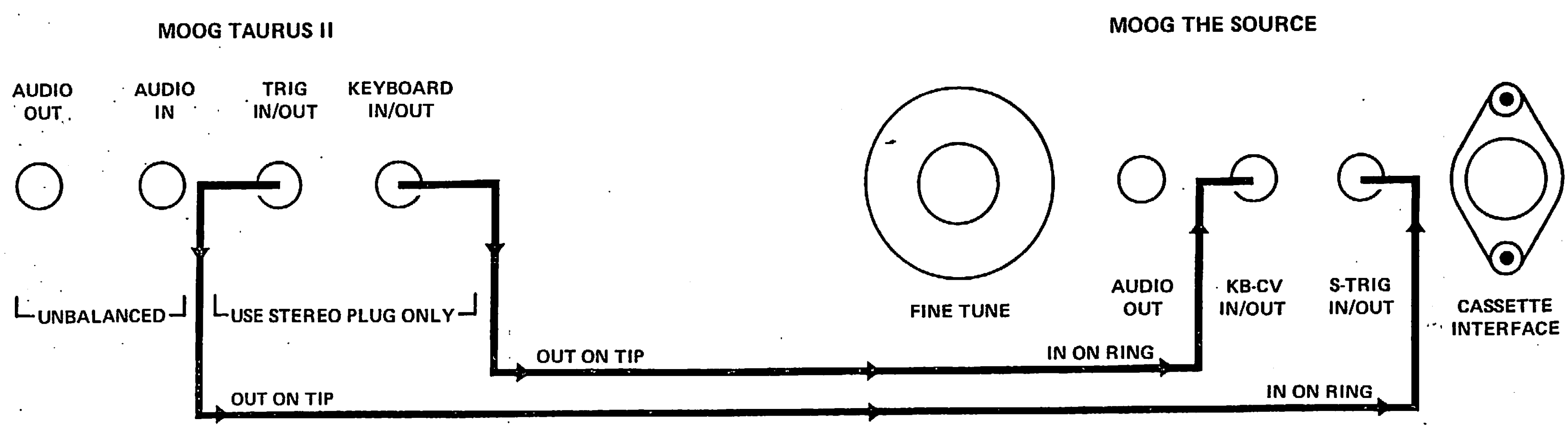



Taurus II has a number of connectors on the rear panel which can be used to interface Taurus II with synthesizers, sequencers and other instruments which are voltage controlled.

Interfacing can work in both directions. Taurus II can control or be controlled by another instrument. When interfacing a Taurus II with another instrument, two connections are normally required: a control voltage (CV) and a trigger or gate.

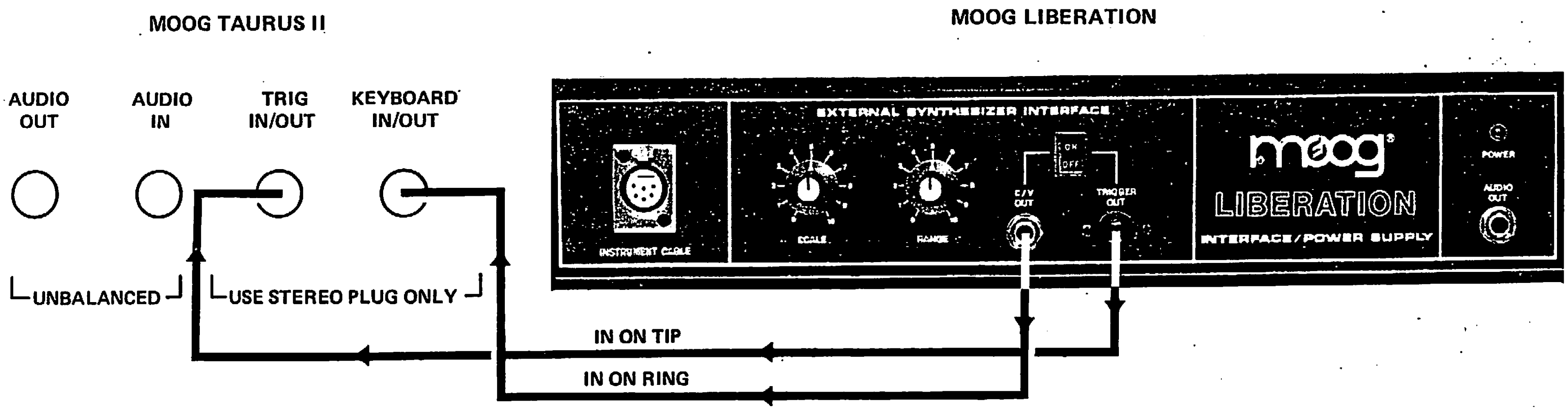
**EXAMPLE 1:** Interface a Taurus II to a Source.
Taurus II would be the master, the Source the slave.

Reason for interface: bigger sound because of two synths playing plus programmability of The Source.



EXAMPLE 2: Interface a Taurus II with a Moog Liberation.
Taurus II would be the slave, the Liberation the master or controller.

Reason for interface: to use the synthesizer module as an expander unit for the Liberation.

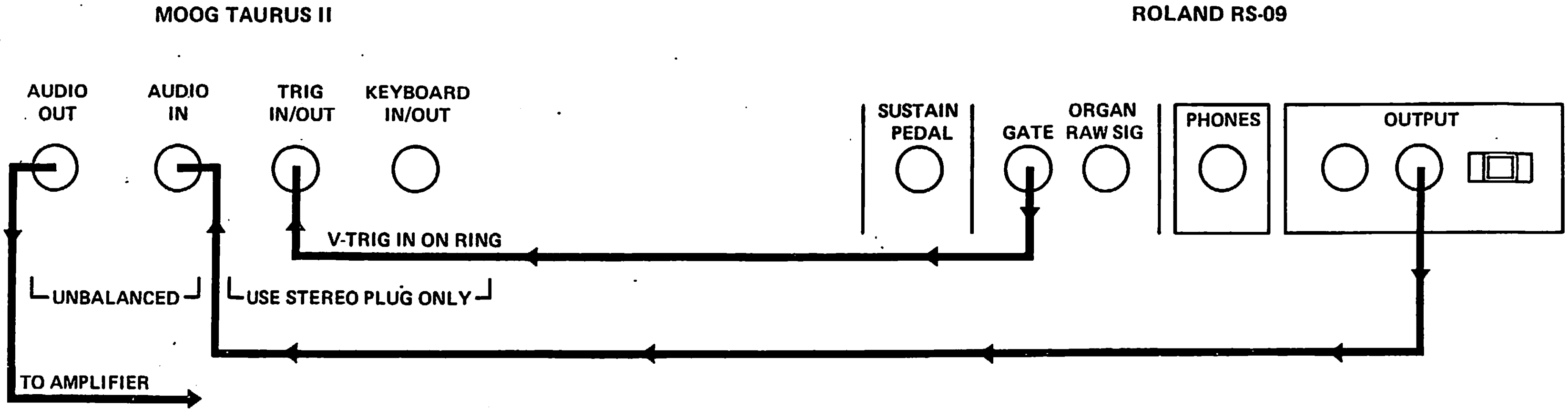



The Liberation's control voltage output must be scaled and ranged. Scaling makes sure intervals are correct on both instruments and ranging ensures unisons are correct. The proper procedure is as follows:

1. Check that the Taurus II is in tune with Liberation.
2. Make all interface connections.
3. Set volume of Taurus II and Liberation so you can hear both instruments clearly.
4. Depress top C on Liberation and adjust range until Taurus II is in tune with Liberation (zero beats).
5. Play low F on Liberation and adjust scale so both instruments are in tune (zero beats).
6. Repeat steps 4 and 5 until perfect tuning is obtained.

The two interface controls contain all control voltages necessary for performance. The voltages for the ribbon, force sensor, modulation and keyboard are all summed together, so the slave instrument now becomes as versatile as Liberation.

**EXAMPLE 3:** Interface a RS-09 Roland Synth with a Taurus II.
Taurus II would be the slave, the RS-09 the controller.
Reason for interface: to use the strings and organ of the RS-09 and produce a brass sound via the Moog filter.

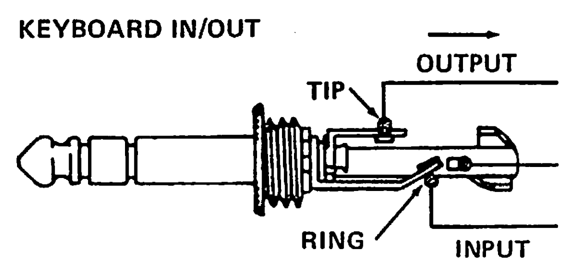



## CONTROL VOLTAGES

The CV supplies information about pitch, e.g., the higher the voltage the higher the pitch. Moog synthesizers use a CV of 1 volt per octave. Many other manufacturers use this system.

Control voltages enter and leave Taurus II at the synthesizer module In/Out connector which is a stereo jack.



## TRIGGERS

A trigger/gate sends a signal which turns ON or OFF the Contour Generators of an instrument. Moog has customarily used S-triggers (switch triggers).

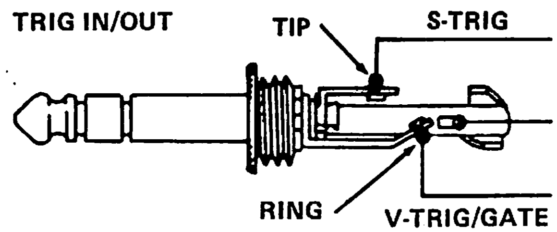
When an S-trigger occurs, the voltage (around 12 volts) goes from +12 to ground. Acting as a switch in the circuit, this causes the Contour Generators to turn on.

Taurus II also has a V-trigger otherwise known as a gate. A V-trigger occurs when the voltage (at 0 volts) goes from 0 to +10 volts. Taurus II will accept input voltages from +3v to +10 volts as V-triggers.

The TRIG IN/OUT connector is a stereo jack and acts as either an input or output.

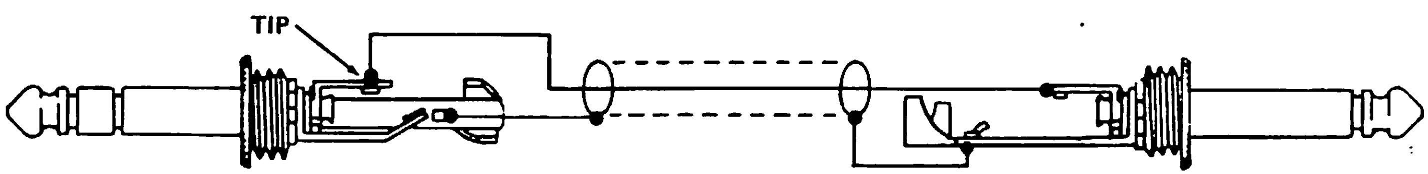
Tip is the S-trigger

Ring is the V-trigger/gate

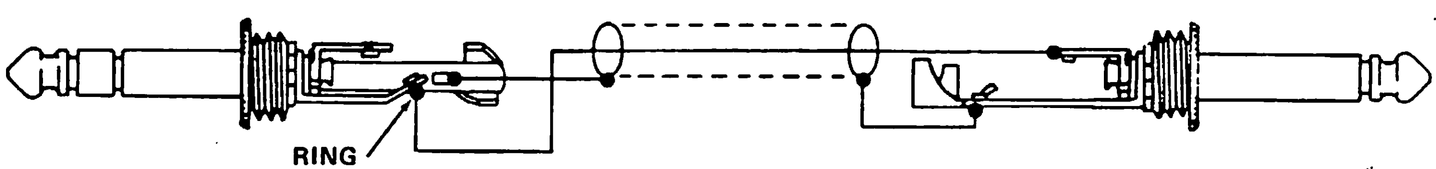



The cables required to interface Taurus II with other Moog products are available from Moog's Service Department at a small cost. Alternatively, you can make up these cables yourself as follows:

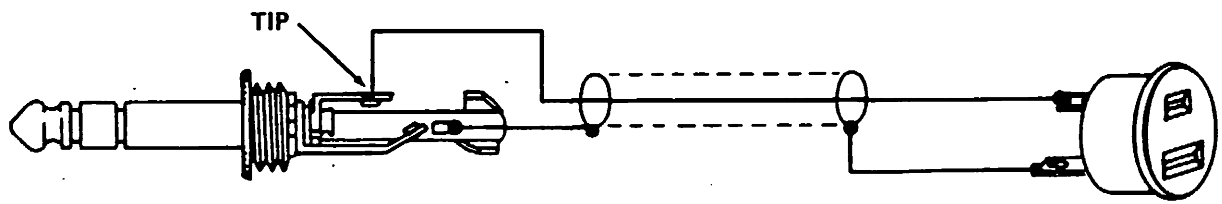
CV OUT




CV IN

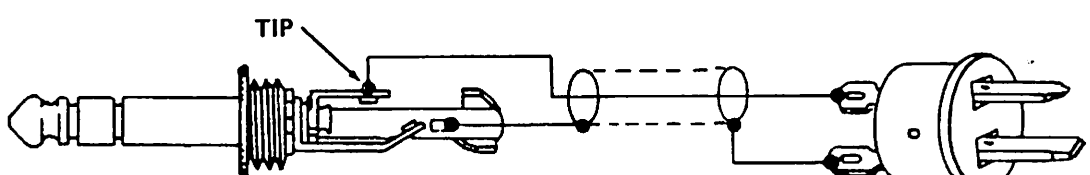


## S-TRIG IN




(FEMALE CINCH-JONES CONNECTOR)

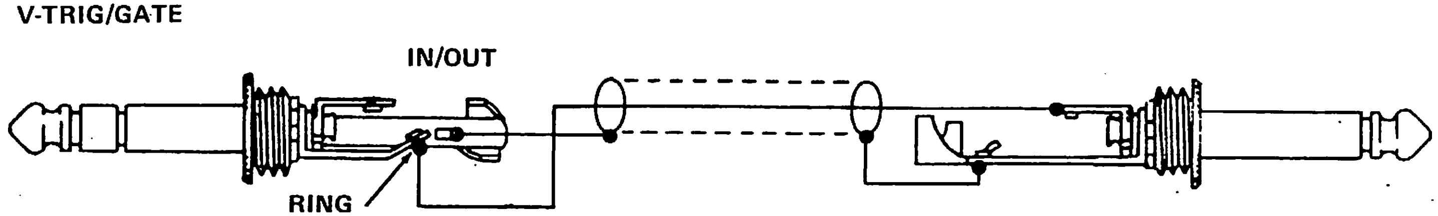
## S-TRIG OUT




(MALE CINCH-JONES CONNECTOR)

### a User Tip

Some other brands of synthesizers (and some newer Moog instruments) may not use the Cinch-Jones connectors. Consult the instrument's owner's manual for proper procedure.




Example only. The wiring of these jacks will depend on the connector they are being plugged into. Refer to a wiring diagram, if available.

## AUDIO IN

Any audio signal can be processed by Taurus II's filter section. (The Audio IN connector routes the signal to the filter.) The signal impedance level should be around 18K. Most HI LEVEL audio signals are within this general range.

The Taurus II filter will act as a sophisticated tone control. When the bypass switch is ON, the filter is controlled by manually adjusting the CUTOFF, EMPHASIS or AMOUNT sliders. Alternatively, with the VCA Mode switch in CONTOUR, the filter can be controlled by depressing a pedal and using the ATTACK and DECAY controls to open and close the filter. Modulation of the filter can also be introduced via the MODULATION WHEEL.

Patching a guitar through the AUDIO IN will enable you to control the tone color, but will not cause Taurus II to play. A pitch to voltage device would be required to achieve this.

Using the AUDIO IN can produce some very interesting effects in conjunction with CV and Trig; e.g., utilizing the Moog filter with a Roland RS-09.

EXAMPLE:

1. Take the GATE OUT from the RS-09 and connect it to the V-GATE IN of the Taurus II.

2. Route the Audio Output of the RS-09 through Taurus II via the AUDIO IN.

3. Set the OSC 1 and OSC 2 sliders of Taurus II to 0.

4. Play the RS-09.

Remember that envelopes of both instruments will be functioning. The envelope with the shortest cycle will dictate when the sound ceases. Therefore, long decay, sustain and release times work best with this example.

When the RS-09 is played, it will control the VCF of Taurus II. Result, the RS-09's audio signal will be passing through the Moog filter, with its full contouring control and the famous Moog sound.

## COMPATIBILITY OF CONTROL VOLTAGES

The CV in Taurus II comes from the pedalboard. The bottom pedal is 0 volts, the top pedal will give 1.5 volts.

If the bottom note of the instrument being interfaced to the Taurus II is C, only a small scale and range adjustment will be necessary to match both instruments. In most cases, it is the slave instrument that should be recalibrated.

For bottom notes which are other than C, larger adjustments or modification may be required.

Refer to a Service Manual or consult a Moog Dealer or Service Center for correct retuning procedures for interfacing.

## SPECIFICATIONS

### Keyboard

Description: 18 note C to F low-note priority
Glide Time: Linear, continuously variable from 5 msec to 2.3 sec (Bottom to top of Keyboard)
Sample & Hold Drift: 4mV/sec maximum

### Modulation

Low Frequency Oscillator Rate: Continuously variable from 0.26Hz to 31Hz
Wave Shapes: Triangle, Square, Random (Sample & Hold)
Amount (Square Wave): Oscillator, Zero to 18 Semitones; Filter, Zero to 4 Octaves
Auto Trig: Triggers contour generator at LFO rate

### Pitch Wheel

Range greater than ± perfect fifth

### Oscillators

Number: Two
Master Tuning Control: ± 2.8 semitones
Reference Frequency: Low C – 32.7Hz ± 0.5Hz
Waveforms: Osc 1 - Sawtooth, square
Osc 2 - Sawtooth, narrow rectangular (Duty Cycle 85% ± 5%)
Octave Footages: 32', 16', 8'
Octave Error: .2% Maximum
Scale Factor Error: 2% Maximum
Range Drift due to Temperature: 10°C to 38°C less than .05%/°C
Osc 2 Interval Range: 16 semitones, ± 3 semitones

### Oscillator Synchronization

In the Sync Mode Oscillator 2's sawtooth wave can be reset by itself or by the reset pulse from Oscillator 1. This locks the fundamental frequency of Oscillator 2 to Oscillator 1, generating a complex waveform.
In the "Contoured" sync mode, control voltage from the contour generator is routed only to Oscillator 2.
Contoured Sync range: 4.0 Octaves maximum, ± 2 Octaves

### Noise

Type: Pseudorandom digital pink noise

### Mixer

When the Oscillator level sliders are set at 5 or higher, the Oscillators overdrive the filter input, producing a small amount of intermodulation distortion - the "Overdrive" sound. Mixer settings below 5 produce normal sound.

### Voltage Controlled Low Pass Filter

Type: 24dB/Octave cutoff slope, with variable height resonant peak at cutoff frequency
Range of Cutoff: 20Hz to 40kHz
Keyboard Tracking: Continuously variable, zero to full keyboard voltage
Sweep of cutoff frequency by contour generator: Continuously variable, zero to 6.3 octaves

### Contour Generator

Type: Retriggerable unconditional ASR
Attack Time: Continuously variable from 4 msec to 4 sec
Decay/Release Time: Continuously variable from 10 msec to 15 sec
Sustain Level: Switchable, zero or 100% of peak contour

### Voltage Controlled Amplifier (VCA)

Audio Output Level: 0dBm
Operating Modes: Contour - VCA is controlled by contour generator
Keyed - VCA fully on when key is depressed, fully off when key is released
By-Pass - VCA fully on

### Rear Panel

KB Control Voltage In: 1 V/Octave ± 1%. Input impedance: 100MΩ
KB Control Voltage In: 1 V/Octave ± 1%. Output impedance: .02Ω
S-Trigger In: Switch closure to ground triggers contour generator
S-Trigger Out: Trigger on is switch closure to ground
V-Trigger In: 3 V in Minimum; 60K Ω Input impedance
V-Trigger Out: 10 Volts out; 20K Ω Output impedance
Nominal Audio Input Level: 0dBm (Input impedance = 18K Ω )
Nominal Audio Output Level: 0dBm (Output impedance = 1K Ω unbalanced)

### Burn In (Aging)

Before final calibration, units are burned in for 24 hours at ambient of approximately 72°F

### Power Requirements

24V AC External Power Supply
Power Consumption: 6 Watts

### Dimensions & Weight

| | Wide | Deep | High | Weight |
|---|---|---|---|---|
| Pedalboard | 31"<br>79cm | 19-1/2"<br>50cm | 5"<br>13cm | 33 lbs.<br>15kg |
| Synthesizer Module | 21"<br>53cm | 6-3/4"<br>17cm | 4-3/8"<br>11cm | 7 lbs.<br>3.2kg |

# INDEX

## SUPPLEMENTARY INFORMATION

A Gig Bag is provided for convenient handling of the instrument.

1. Insert the stand in the long narrow pocket which runs the length of the Gig Bag. (The stand will act as a support.)
2. The synthesizer module fits in the left side pocket of the Gig Bag.
3. The cable and power supply fit in the smaller pocket on the right side of the bag.
4. The two small straps of the Gig Bag then attach to the two strap posts located at the top of the pedal unit.

The whole assembly can then be carried by the handle at the rear of the pedal unit.

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